

*Revised 2011 Annual Groundwater Monitoring Report  
Taylor Lumber and Treating Superfund Site  
Sheridan, Oregon*

Prepared for:  
Oregon Department of Environmental Quality

September 14, 2011  
1843-00/Task 3

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## **1.0 Introduction**

This Groundwater Monitoring Report describes the results of annual groundwater monitoring activities at and in the vicinity of the Taylor Lumber and Treating (TLT) Superfund Site located at 22125 SW Rock Creek Road in Yamhill County, Sheridan, Oregon (Site; Figure 1). This report was prepared for the Oregon Department of Environmental Quality (DEQ) under Task 3 of Task Order No. 57-08-28. The monitoring activities described in this report were conducted in general accordance with the Groundwater Monitoring Work Plan submitted to DEQ on April 22, 2011 (Work Plan; Ash Creek Associates, Inc. [Ash Creek], 2011). The Work Plan was technically based on the *Long-term Groundwater Monitoring and Reporting Plan - Taylor Lumber and Treating Superfund Site* prepared by the United States Environmental Protection Agency (EPA) in March 2010 (LGMP; EPA, 2010). The Work Plan was prepared to be fully inclusive of the LGMP; therefore, there are no significant changes to note between the LGMP and the Work Plan.

### **1.1 Background**

The Site is a wood treating facility that was operated by TLT from 1946 until 2001, when TLT filed for bankruptcy. Pacific Wood Preserving of Oregon (PWPO) entered into a Prospective Purchaser Agreement (PPA) with the U.S. Environmental Protection Agency (EPA) and purchased the wood treatment portion of the facility. An Amendment to Agreement and Covenant Not to Sue between EPA and PWPO was finalized on May 26, 2011, and an Amended PPA between DEQ and PWPO was finalized on June 7, 2011. PWPO began operations at the Site in 2002, treating wood using copper- and borate- based solutions. Beginning June 7, 2011, PWPO began using a pentachlorophenol solution to treat wood.

A Record of Decision (ROD) for the Site was signed on September 30, 2005 (EPA, 2005). In accordance with the ROD, contaminated soils have been removed from the Site. However, contaminated soils and groundwater remain within the treatment plant area at the Site, enclosed by a soil-bentonite barrier wall. A low-permeability asphalt cap has been placed over the entire area enclosed by the barrier wall, which impedes the infiltration of stormwater into the groundwater located within the barrier wall. Four groundwater extraction wells have been installed within the barrier wall to stimulate an inward hydraulic gradient and prevent water from rising above the cap (EPA, 2010). The ROD identifies pentachlorophenol (PCP) as the contaminant of concern (COC) in Site groundwater (EPA, 2005).

### **1.2 Scope of Work**

The scope of work was completed in general accordance with the Work Plan (Ash Creek, 2011). The following activities comprise the scope of work as summarized in the Work Plan:

- 1) For health and safety purposes, measure organic vapors in the well headspace prior to monitoring and sampling activities.
- 2) Observe and note well conditions in the project field notes (Appendix A).



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- 3) Measure water levels in Site monitoring wells as well as in extraction wells PW-01 through PW-04, located within the barrier wall.
  - 4) Measure water quality parameters prior to sampling to determine water stability during purging and to qualify the representativeness of the samples.
  - 5) Collect groundwater samples for PCP analysis from 19 monitoring wells located outside the barrier wall.
  - 6) Collect groundwater samples for PCP analysis from residential wells RW-01 and RW-02.

These activities are discussed in detail within this report as well as any deviations from the Work Plan.

## **2.0 Summary of Field Events**

A field representative from Ash Creek conducted the 2011 annual groundwater monitoring event at the Site from April 25 through April 27, 2011. Work was conducted in general accordance with the Sampling and Analysis Plan (SAP) in Appendix B of the Work Plan (Ash Creek, 2011). The Work Plan is provided as Appendix B of this report. As described in Section 1.2, field activities included well headspace monitoring and documentation of well conditions, measurement of depth to water from extraction and monitoring wells, and collection of groundwater samples from monitoring wells and one residential well. Table 1 lists the groundwater monitoring wells and residential wells that were gauged and sampled as part of the Site monitoring program. Any deviations from the Work Plan are discussed in Section 2.5 of this report. The location of the monitoring, extraction, and residential wells included in the monitoring program are shown on Figure 2.

### **2.1 Well Inspection and Headspace Screening**

Prior to sampling, site conditions were recorded including temperature, precipitation, wind direction, and any other factors that could affect sample quality. The well monuments were inspected for signs of damage, and were noted accordingly in the field notes (Appendix A). In general the wells were in good condition, with the exception of missing bolts on some of the flush monument well covers (see notes in Appendix A). The well locks were replaced in each of the wells with well locks keyed to a common key. The well lids were opened and the headspace around each well was screened for organic vapors using a photoionization detector (PID). Headspace concentrations measurements were documented in the field notes provided in Appendix A. PID concentrations were consistently below 1 part per million (ppm; PID calibrated to 100 ppm isopropylbenzene) indicating that breathing space conditions were safe for the field representative.



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## 2.2 Groundwater Elevation Measurements

On April 25, 2011 groundwater elevation measurements were collected from 21 wells in accordance with the Work Plan (Ash Creek, 2011). The well lids and caps were opened a minimum of 5 minutes prior to collecting measurements so that the air pressure in the well had time to equilibrate with the ambient air pressure. Depth to groundwater measurements were conducted with an electronic water level probe in accordance with the SAP (see Appendix B of Appendix B). Depth-to-water measurements and groundwater elevation data are provided in Table 2. A groundwater potentiometric map for the Site and vicinity is provided on Figure 3.

## 2.3 Groundwater Sampling

Groundwater samples from 19 wells were sampled for pentachlorophenol during the 2011 annual monitoring event. Groundwater was purged in each well before sampling using dedicated Teflon tubing and a peristaltic pump. Field parameters, including temperature, pH, dissolved oxygen, oxidation-reduction potential, specific conductivity, and turbidity were collected during the purging process using a flow-through cell. Detailed groundwater sampling procedures are described in the SAP (see Appendix B of Appendix B). Field parameter measurements are documented in the field notes in Appendix A. After purging, groundwater samples were collected in accordance with the Work Plan (Ash Creek, 2011).

## 2.4 Handling of Investigation-Derived Waste

Investigation-derived waste (IDW) consisted of purge water and decontamination water. IDW generated during the monitoring event was placed in covered buckets and was transported to and disposed of in the drain located to the north of the stormwater treatment system (Figure 2). Disposable items, such as gloves, paper towels, etc., were disposed of as municipal waste.

## 2.5 Deviations from Work Plan

- The owners of residential well RW-02 could not be contacted prior to the monitoring event. The field representative from Ash Creek met the property owner at the residence during the monitoring event and was notified that the pump for the residential well had not been operable for several years. According to the resident, the well water had historically been used for washing cars and had never been used for drinking water. The property owner stated that the residence used a municipal water supply for drinking water. Therefore, RW-02 was not sampled.
- Monitoring well MW-12S is constructed of 6-inch-diameter PVC casing. In order to purge a minimum of three well volumes using the maximum peristaltic pump flow rate, the field staff determined it would take approximately 4.5 hours to purge the well prior to sampling. In order to collect a groundwater sample representative of the aquifer in an efficient timeframe, field parameters were measured every 5 minutes while purging the well. Once pH and temperature



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conditions reached values similar to results for the other wells at the Site, and the other field parameters stabilized (dissolved oxygen, turbidity, etc.) the well was considered adequately purged and ready for sampling. The total purge volume for MW-12S was approximately 0.3 well volumes.

- Water levels could not be measured in extraction well PW-03 because the extraction pump rigid tubing was covering the portal for inserting the water level tape. The well cap and tubing configuration could not be safely moved without potentially damaging the extraction pump setup. The PWPO operations manager will be contacted prior to the 2012 monitoring event to see if the extraction pump configuration could be adjusted to allow water level tape access.

### **3.0 Monitoring Results**

#### **3.1 Groundwater Elevation Results**

A groundwater elevation contour map is provided on Figure 3. Groundwater flow at the site is from the northwest to southeast towards the South Yamhill River and is consistent with historical documentation of groundwater flow direction (CMH2MHill, 2003). The groundwater contour map in Figure 3 depicts a depression in the groundwater flow path that coincides with the perimeter or the barrier wall. Within the barrier wall, groundwater elevations are between 5 to 10 feet lower than the surrounding area as groundwater is being actively extracted from within the barrier wall. Within the barrier wall, the groundwater flow direction is not consistent with regional flow, and suggests that groundwater extraction from within the barrier wall has successfully produced a localized inward gradient.

#### **3.2 Groundwater Analytical Results**

The groundwater samples were submitted to ESC Lab Sciences (ESC) in Mt. Juliet, Tennessee for laboratory analysis of PCP by EPA Method 8270 (PCP only). ESC is certified to analyze PCP in water samples in the state of Oregon. A copy of the Oregon laboratory certification and analytical reports are included in Appendix C, along with a quality assurance/quality control (QA/QC) review of the data. The results of the data quality review indicate that the data are of acceptable quality and are suitable for their intended purpose. The April 2011 groundwater analytical results as well as historical analytical results are presented in Table 3.

### **4.0 Data Evaluation and Conclusions**

Concentration trends (from February 2002 through May 2011) for PCP in groundwater from wells MW-1S, MW-11S, MW-15S, MW-16S, PZ-105, and MW-103S are provided in Appendix D. These wells were selected to evaluate long-term concentration trends in Site perimeter and off-site wells and to confirm that PCP in groundwater has not migrated south to the South Yamhill River or to the east under Rock Creek



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Road. The trend plots for wells MW-15S, MW-16, MW-103S, and PZ-105, all located to the south of the Site, were either stable or decreasing. PCP concentrations in groundwater in wells located to the south of Highway 18B (MW-20s, MW10S, MW-24S and MW-9S) were non-detect during the April 2011 monitoring event. The data confirm that migration to the south towards the South Yamhill River is not occurring.

Trend plots for wells MW-1S and MW-11S were used to confirm that PCP in groundwater was not migrating beyond the Site barrier wall and to the east under Rock Creek Road. Concentrations in MW-1S have decreased from 14 µg/L to non-detect between November 2002 and April 2011. While concentrations of PCP in well MW-11s have been variable with concentrations slightly over reporting limits, there have been no significant increases in PCP concentrations in the well that would indicate that eastern migration is occurring.

Concentrations of PCP have been non-detect in water wells RW-01 and RW-02 since wells were initially sampled in 1999. As discussed in Section 2.5, according to the residential property owner, the well pump at RW-02 has been out of operation for several years. The residents indicated that the well had not been used for drinking water purposes, and only for occasional car washing. The residence is now connected to the municipal water supply. It is anticipated that the water well pump will not be repaired and that well RW-02 will remain out of operation. It is unlikely that the RW-02 well pump will be operable for sampling during the next annual monitoring event in April 2012.

## **5.0 References**

- Ash Creek Associates, 2011. *Groundwater Monitoring Work Plan* Former Taylor Lumber Site, Sheridan, Oregon. April 22, 2011.
- CH2MHill, 2003. *Remedial Investigation Report Taylor Lumber and Treating Superfund Site Sheridan, Oregon Volume I*. October, 2003.
- U.S. Environmental Protection Agency (EPA), 2005. *Final Record of Decision Taylor Lumber and Treating Superfund Site, Sheridan, Oregon*. September 30, 2005.
- EPA, 2010. *Long-term Groundwater Monitoring and Reporting Plan. Taylor Lumber and Treating Superfund Site*. March, 2010.



Table 1  
Groundwater Monitoring Program  
Taylor Lumber and Treating

Well I.D.	Wells to be Sampled	Water Level Measurements*
<b>Outside Barrier Wall</b>		
MW-1S	X	X
MW-6S	X	X
MW-6D	X	X
MW-12S	X	X
MW-13S	X	X
MW-15S	X	X
MW-16S	X	X
MW-19S	X	X
MW-20S	X	X
MW-25S	X	X
MW-103S	X	X
PZ-101	X	X
PZ-102	X	X
PZ-105	X	X
<b>South of Highway 18B</b>		
MW-9S	X	X
MW-10S	X	X
MW-24S	X	X
<b>East of Rock Creek Road</b>		
MW-11S	X	X
<b>Residences**</b>		
RW-01	X	
RW-02	X	
<b>Extraction Wells Inside Barrier Wall</b>		
PW-1		X
PW-02		X
PW-03		X
PW-04		X

1. \* = Indicates wells in which water level measurements will be collected.

2. \*\* = Residential addresses and contact information are as follows:

**RW- 01:** 31100 West Valley Highway - Residential property owned by Bob Bowman - 503-843-2530

**RW-02:** 1523 W. Main Street - Steven and Melinda Burk - 971-241-0831

**MW-9S:** Residential property owned by Robert and Patricia Harris - 503-472-8017

**MW-11S:** Northwest Gazebo - George Gabriel owner - 503-843-0024

**Notes:** See footnotes in Tables 2 and 3 for any deviations from the monitoring plan.

The EPA Long Term Groundwater Monitoring and Reporting Plan (EPA, 2010) depicted Well MW-9S as both "Outside the Barrier Wall" and "South of Highway 18B". The tables in this report have been revised to denote well MW-9S as "South of Highway 18B" only.

Table 2  
Groundwater Elevation Results  
Taylor Lumber and Treating

Well Number/ (TOC Elevation)	Date of Measurement	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
<b>Outside Barrier Wall</b>			
MW-1S (207.41)	4/25/2011	3.11	204.3
MW-6S (204.39)	4/25/2011	2.72	201.67
MW-6D (204.04)	4/25/2011	2.35	201.69
MW-12S (204.49)	4/25/2011	2.80	201.69
MW-13S (204.92)	4/25/2011	3.15	201.77
MW-15S (204.68)	4/25/2011	2.92	201.76
MW-16S (205.19)	4/25/2011	2.95	202.24
MW-19S (210.44)	4/25/2011	4.71	205.73
MW-20S (208.87)	4/25/2011	5.51	203.36
MW-25S (208.74)	4/25/2011	5.87	202.87
MW-103S (207.62)	4/25/2011	3.68	203.94
PZ-101 (208.48)	4/25/2011	3.61	204.87
PZ-102 (204.02)	4/25/2011	3.54	200.48
<b>South of Highway 18B</b>			
PZ-105 (205.94)	4/25/2011	3.45	202.49
MW-9S (204.04)	4/25/2011	6.72	197.32
MW-10S (203.17)	4/25/2011	9.55	193.62
MW-24S (205.49)	4/25/2011	13.59	191.9
MW-11S (207.27)	4/25/2011	2.59	204.68
<b>Extraction Wells Inside Barrier Wall</b>			
PW-1 (203.93)	4/25/2011	6.55	197.38
PW-02 (204.96)	4/25/2011	8.92	196.04
PW-03 (206.3)	4/25/2011	Water Level Port Obstructed	
PW-04 (206.98)	4/25/2011	11.98	195.00

\* = The water level tape portal was obstructed during the monitoring event.

Table 3  
Groundwater Analytical Results  
Taylor Lumber and Treating

Well ID	Date of Measurement	Pentachlorophenol (µg/L)
<b>Outside Barrier Wall</b>		
MW-1S	5/1/1999*	--
	Feb-02	<25
	May-02	<b>6.9</b>
	Aug-02	<b>14</b>
	Nov-02	<b>14</b>
	Feb-03	6 J
	May-03	<b>3.3</b>
	4/25/2011	<0.33
MW-6S	May-99	<25
	Feb-02	<b>0.82</b>
	May-02	<b>0.88</b>
	Aug-02	<b>1</b>
	Nov-02	0.88 J
	Feb-03	--
	May-03	--
	4/25/2011	<0.33
	4/25/2011 DUP	<0.33
MW-6D	4/25/2011	<0.33
MW-12S	May-99	--
	Feb-02	<b>0.32</b>
	May-02	<b>0.3</b>
	Aug-02	<b>0.45</b>
	Nov-02	0.22 J
	Feb-03	--
	May-03	--
	4/25/2011	<0.33
MW-13S	May-99	--
	Feb-02	<b>0.25</b>
	May-02	<b>0.25</b>
	Aug-02	<b>2</b>
	Nov-02	2.6 J
	Feb-03	<0.32
	May-03	<0.56
	4/25/2011	<0.33
MW-15S	May-99	--
	Feb-02	<b>220</b>
	May-02	<b>220</b>
	Aug-02	<b>250</b>
	Nov-02	<b>210</b>
	Feb-03	<b>130</b>
	May-03	<b>190</b>
	4/25/2011	<b>12</b>

Please refer to notes at end of table.

Table 3  
Groundwater Analytical Results  
Taylor Lumber and Treating

Well ID	Date of Measurement	Pentachlorophenol (µg/L)
MW-16S	May-99	--
	Feb-02	10.0
	May-02	15.0
	Aug-02	28.0
	Nov-02	21 J
	Feb-03	11.0
	May-03	11.0
	4/25/2011	11.0
	4/25/2011 DUP	11.0
MW-19S	May-99	--
	Feb-02	--
	May-02	--
	Aug-02	0.067
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	0.061
	4/25/2011	<0.33
MW-20S	May-99	--
	Feb-02	--
	May-02	--
	Aug-02	0.013 J
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	0.027 J
	4/25/2011	<0.33
MW-25S	12/19/2005	424
	12/19/2005 DUP	396
	4/25/2011	230
MW-103S	May-99	5.6
	Feb-02	6.4
	May-02	7
	Aug-02	12
	Nov-02	4.7 J
	Feb-03	5
	May-03	20
	4/25/2011	1.6
PZ-101	May-99	<25
	Feb-02	0.14
	May-02	0.15
	Aug-02	0.14
	Nov-02	1.1 J
	Feb-03	--
	May-03	0.067
	4/25/2011	<0.33
PZ-102	May-99	<25
	Feb-02	0.37
	May-02	0.3
	Aug-02	0.34
	Nov-02	0.13 J
	Feb-03	0.23 J
	May-03	<0.32
	4/25/2011	<0.33

Please refer to notes at end of table.

Table 3  
Groundwater Analytical Results  
Taylor Lumber and Treating

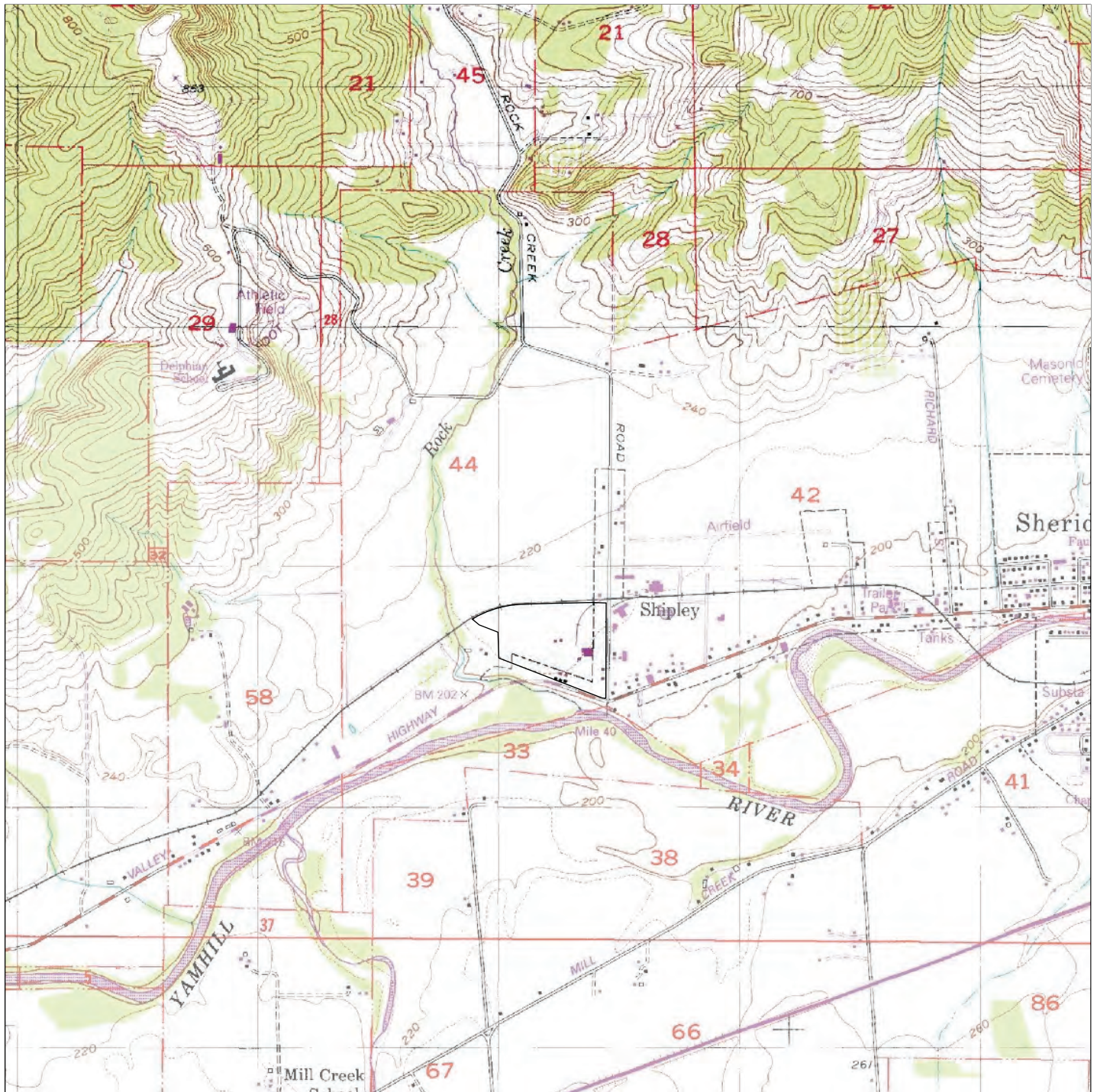
Well ID	Date of Measurement	Pentachlorophenol (µg/L)
PZ-105	May-99	82 J
	Feb-02	3.5
	May-02	8.2
	Aug-02	17
	Nov-02	4.0 J
	Feb-03	0.77
	May-03	2.6
	4/25/2011	<0.33
<b>South of Highway 18B</b>		
MW-9S	May-99	<24
	Feb-02	<0.047
	May-02	<0.049
	Aug-02	<0.023
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	<0.046
	4/25/2011	<0.33
MW-10S	May-99	<26
	Feb-02	0.099
	May-02	0.13
	Aug-02	0.38
	Nov-02	0.18 J
	Feb-03	<0.32
	May-03	0.13
	4/25/2011	<0.33
MW-24S	4/25/2011	<0.33
<b>East of Rock Creek Road</b>		
MW-11S	May-99	<25
	Feb-02	0.18
	May-02	0.18
	Aug-02	0.36
	Nov-02	<0.32
	Feb-03	<0.32
	May-03	0.18
	4/25/2011	0.87 J
<b>Residences</b>		
RW-01	May-99	<25
	Feb-02	<0.045
	May-02	<0.049
	Aug-02	<0.046
	Nov-02	<0.32
	Feb-03	<0.045
	May-03	<0.046
	4/25/2011	<0.33

Please refer to notes at end of table.

Table 3  
Groundwater Analytical Results  
Taylor Lumber and Treating

Well ID	Date of Measurement	Pentachlorophenol (µg/L)
RW-02	May-99	--
	Feb-02	<0.045
	May-02	0.026 J
	Aug-02	0.046 J
	Nov-02	<0.32
	Feb-03	--
	May-03	0.026 J
	4/25/2011	--

1. Sample dates for historical (pre-2005) data are not available; results available in month/year format only.
2. J = Detected value was below the lowest calibration point for the analysis; therefore, results are estimated.
3. -- = Not Sampled
4. **BOLD** indicates analyte detected above method reporting limit.
5. DUP = Duplicate sample.
6. \* = RW-02 not sampled during April 2011 monitoring event. During the monitoring event the residential property owner indicated that the water well pump was no longer operable.



**Note:** Base map prepared from USGS 7.5-minute quadrangle of Sheridan, OR, revised 1992 as provided by MSR Maps.com.

0 2,000 4,000  
Approximate Scale in Feet



## Site Location Map

2011 Groundwater Monitoring Report  
Taylor Lumber and Treating Superfund Site  
Sheridan, Oregon

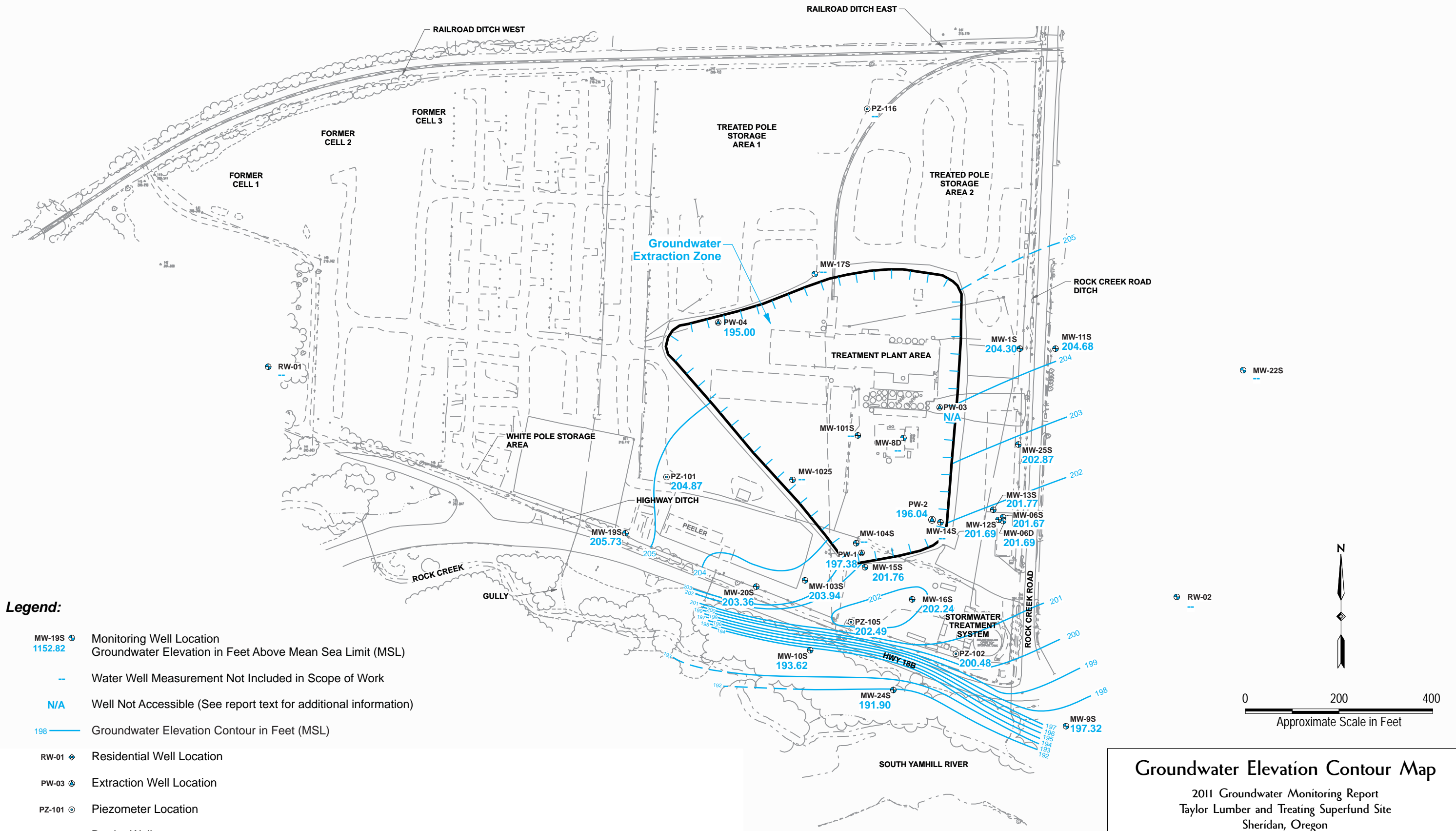


Ash Creek Associates, Inc.  
Environmental and Geotechnical Consultants

Project Number	1843-00
August 2011	

Figure  
**1**





## Groundwater Elevation Contour Map

2011 Groundwater Monitoring Report  
Taylor Lumber and Treating Superfund Site  
Sheridan, Oregon

## ***Appendix A***

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### **Field Notes and Well Sampling Sheets**



Ash Creek Associates, Inc.  
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PROJECT NUMBER 1843-00/T2

FIELD REPORT NUMBER \_\_\_\_\_

PAGE \_\_\_\_\_

OF \_\_\_\_\_

DATE \_\_\_\_\_

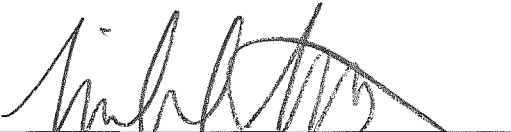
04/25/11 MONDAY

PROJECT	<u>DEQ TAYLOR LUMBER</u>	ARRIVAL TIME	<u>1115</u>
LOCATION	<u>SHERIDAN, OREGON</u>	DEPARTURE TIME	<u>1700</u>
CLIENT	<u>DEQ/EPA</u>	WEATHER	<u>CLOUDY/OVERCAST (51°) WIND SW 15MPH</u>
PURPOSE OF OBSERVATIONS	<u>ANNUAL GROUNDWATER MONITORING ACTIVITIES</u>		
ASH CREEK REPRESENTATIVE	<u>M. WHITSON</u>	ASH CREEK PROJECT MANAGER	<u>S. BOSZE</u>
CONTRACTOR	<u>---</u>	PERMIT NO.	<u>---</u>
CONTRACTOR REP.	<u>---</u>	H&S REVIEW	<u>✓</u>

Our firm's professionals are represented on site solely to observe operations of the contractor identified, to form opinions about the adequacy of those operations, and to report those opinions to our client. The presence and activities of our field representative do not relieve any contractor from its obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods, operations, and sequence of construction. Unless signed by the Ash Creek Associates Project Manager, this report is preliminary. A preliminary report is provided solely as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those included in a preliminary report.

0900 PACK UP EQUIPMENT AND FIELD SUPPLIES, CALIBRATE PID  
0945 DEPART FOR SITE  
1115 ARRIVE ONSITE CHECK IN AT OFFICE, TOM BAKER NOT ONSITE, FIND WELLS HASP, START OPENING WELLS MONITORING HEADSPACE WITH PID  
1200 STARTS RAINING MODERATELY  
1300 STOPS RAINING  
1305 NORM READ (DEQ) ARRIVES ONSITE, WALK SITE, OPEN UP WELLS MW-10S, MW-24S MW-11S, CANNOT FIND MW-9S ACROSS HWY 18, WALK OVER TO HOUSE AT THAT LOCATION, OWNER POINTS OUT WELL  
MOB BACK TO VAN  
1400 NORM READ DEPARTS  
1405 FINISH OPENING WELLS  
OPEN PW WELL VAULTS  
START GAUGING WELLS  
1600 FINISH GAUGING WELLS, PW-03 UNABLE TO BE GAUGED, WILL RETURN LATER  
CLEAN UP, CALIBRATE EQUIPMENT (YSI)  
ORGANIZE SUPPLIES FOR SAMPLING  
SETUP SAMPLE BOTTLES, PUMP, POWER SUPPLY ETC.  
ASK HOW LATE GATE TO SITE WILL REMAIN UNLOCKED AT MAIN OFFICE, RECEPTION  
SAYS 1700 GATES WILL BE CLOSED AND LOCKED.  
WRAP THINGS UP FOR DAY  
PACK UP VEHICLE, CALL S. BOSZE TO UPDATE  
1700 DEPART SITE FOR HOTEL IN DALLAS, OR

BY

  
ASH CREEK ASSOCIATES REPRESENTATIVE

REVIEWED BY

ASH CREEK ASSOCIATES PROJECT MANAGER



# Ash Creek Associates, Inc.

Environmental and Geotechnical Consultants

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PROJECT NUMBER 1843-00/12  
FIELD REPORT NUMBER \_\_\_\_\_  
PAGE 1 OF 2  
DATE 04/26/11 TUESDAY

PROJECT	<u>TAYLOR LUMBER ANNUAL GWM</u>	ARRIVAL TIME	<u>0835</u>
LOCATION	<u>SHERIDAN, OREGON</u>	DEPARTURE TIME	<u>1800</u>
CLIENT	<u>PER</u>	WEATHER	<u>CLOUDY L. RAIN (50'S) L. WINDS S</u>
PURPOSE OF OBSERVATIONS	<u>ANNUAL GROUNDWATER MONITORING ACTIVITIES</u>		
ASH CREEK REPRESENTATIVE	<u>M. WHITSON</u>	ASH CREEK PROJECT MANAGER	<u>S. BOSZE</u>
CONTRACTOR	<u>--</u>	PERMIT NO.	<u>--</u>
CONTRACTOR REP.	<u>--</u>	H&S REVIEW	<u>✓</u>

Our firm's professionals are represented on site solely to observe operations of the contractor identified, to form opinions about the adequacy of those operations, and to report those opinions to our client. The presence and activities of our field representative do not relieve any contractor from its obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods, operations, and sequence of construction. Unless signed by the Ash Creek Associates Project Manager, this report is preliminary. A preliminary report is provided solely as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those included in a preliminary report.

0835 ARRIVE ONSITE, HASD REVIEW, MOB TO PZ-105, SETUP ON WELL WITH EQUIP.  
START PURGING PZ-105  
1015 PZ-105 SAMPLE TAKEN  
MOB TO MW-155  
PURGE MW-155  
1145 SAMPLE MW-155 TAKEN  
MOB TO MW-135  
PURGE MW-135  
1200 SAMPLE MW-135 TAKEN  
MOB TO MW-125  
SETUP ON MW-125, 6-INCH PVC CASING WITH 9-FOOT WATER COLUMN  
WILL REQUIRE 13.3 GALLONS PER CASING VOLUME, AT HIGHEST PUMPING  
RATE WITH PERISTALTIC PUMP WILL TAKE APPROXIMATELY 4.5 HOURS  
FOR 3 CASING VOLUMES, START PURGING WELL, CALL S. BOSZE ABOUT  
TIME IT WILL TAKE TO PURGE ACCORDING TO PLAN, S. BOSZE EXPLAINS  
TO PURGE WELL, AND START COLLECTING PARAMETERS ON 5 MINUTE  
INTERVALS TO SEE IF VALUES EQUILIBRATE, S. BOSZE WILL CALL NORM  
READ TO DISCUSS CHANGE TO SAMPLING PLAN.  
WELL EQUILIBRATES, S. BOSZE CALLS, OKAY TO SAMPLE WELL AFTER  
STABILIZES.  
1410 SAMPLE MW-125 TAKEN  
MOB TO MW-06D  
START PURGING MW-06D, WELL IS ALMOST 30' TOTAL DEPTH, WILL ALSO  
REQUIRE 1.5 HOURS TO PURGE 3 CASING VOLUMES, CALL S. BOSZE TO ASK

BY

ASH CREEK ASSOCIATES REPRESENTATIVE

REVIEWED BY

ASH CREEK ASSOCIATES PROJECT MANAGER



# Ash Creek Associates, Inc.

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www.ashcreekassociates.com

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IF 5 MINUTE INTERVALS WILL BE ACCEPTABLE ON THIS WELL, OKAY  
TO USE 5 MINUTE STABILIZATION METHOD ON MW-06D ONLY.

1510 SAMPLE MW-06D TAKEN

SETUP ON MW-06S

PURGE MW-06S

1620 SAMPLE MW-06S TAKEN, DUPLICATE, MATRIX SPIKE, AND MATRIX SPIKE  
DUPLICATE TAKEN,

MOB TO MW-9S

SETUP ON WELL, START PURGING

1750 SAMPLE MW-9S TAKEN

1800 CLEAN UP AND DEPART SITE

BY

ASH CREEK ASSOCIATES REPRESENTATIVE

REVIEWED BY

ASH CREEK ASSOCIATES PROJECT MANAGER



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PROJECT	<u>TAYLOR LUMBER ANNUAL GWM</u>	ARRIVAL TIME	<u>0700</u>
LOCATION	<u>SHERIDAN, OREGON</u>	DEPARTURE TIME	<u>1845</u>
CLIENT	<u>DEQ</u>	WEATHER	<u>M. CLEAR (50'S/60'S) L. WIND S</u>
PURPOSE OF OBSERVATIONS	<u>ANNUAL GROUNDWATER MONITORING ACTIVITIES</u>		
ASH CREEK REPRESENTATIVE	<u>M. WHITSON</u>	ASH CREEK PROJECT MANAGER	<u>S. BOSZE</u>
CONTRACTOR	<u>--</u>	PERMIT NO.	<u>--</u>
CONTRACTOR REP.	<u>--</u>	H&S REVIEW	<u>✓</u>

Our firm's professionals are represented on site solely to observe operations of the contractor identified, to form opinions about the adequacy of those operations, and to report those opinions to our client. The presence and activities of our field representative do not relieve any contractor from its obligation to meet contractual requirements. The contractor retains sole responsibility for site safety and the methods, operations, and sequence of construction. Unless signed by the Ash Creek Associates Project Manager, this report is preliminary. A preliminary report is provided solely as evidence that field observation was performed. Observations and/or conclusions and/or recommendations conveyed in the final report may vary from and shall take precedence over those included in a preliminary report.

<p>0700 ARRIVE ONSITE HASP REVIEW, CHECK IN AT OFFICE, MOB TO MW-16S SETUP ON MW-16S PURGE MW-16S</p> <p>0800 SAMPLE MW-16S TAKEN (MW-16S DUP) MOB TO PZ-102 SETUP ON PZ-102</p> <p>0850 SAMPLE PZ-102 TAKEN MOB TO MW-103S SETUP ON MW-103S</p> <p>0950 SAMPLE MW-103S TAKEN MOB TO MW-20S SETUP ON MW-20S</p> <p>1045 SAMPLE MW-20S MOB TO MW-19S SETUP ON MW-19S</p> <p>1150 SAMPLE MW-19S TAKEN MOB TO PZ-101 SETUP ON PZ-101</p> <p>1300 SAMPLE PZ-101 TAKEN MOB TO MW-1S SETUP ON MW-1S</p> <p>1400 SAMPLE MW-1S TAKEN MOB TO MW-11S SETUP ON MW-11S</p>	<p>1505 SAMPLE MW-11S TAKEN MOB TO MW-25S SETUP ON MW-25S</p> <p>1610 SAMPLE MW-25S TAKEN CLEAN UP, MOB OFFSITE TO RW-02 LOCATION AT 1523 W. MAIN ST., KNOCK AT FRONT DOOR, NO ANSWER WALK AROUND PROPERTY LOOKING FOR OWNER OR TENANT. NO ONE FOUND, FIND WELL HOUSE, PUMP LOC- ATION, PUMP NOT RUNNING, CALL S. BOSZE, HOMEOWNER (STEVEN BURK) ARRIVES, EXPLAIN PRESENCE AND REASON FOR VISIT, HOMEOWNER DOES NOT SEEM HAPPY. CALL S. BOSZE, NEVER HAD ACCESS AGREEMENT, NO SAMPLE COLLECTED</p>
--	--

BY

ASH CREEK ASSOCIATES REPRESENTATIVE

REVIEWED BY

ASH CREEK ASSOCIATES PROJECT MANAGER



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MOB TO RW-01 AT BOWMAN RESIDENCE, SPEAK WITH ROBERT BOWMAN  
GRANTS ACCESS TO TAP AT PUMPHOUSE, PURGE FOR 10 MINUTES  
AND START COLLECTING PARAMETERS.  
1715 SAMPLE RW-01 TAKEN  
MOB TO MW-105  
SETUP ON MW-105  
1745 SAMPLE MW-105 TAKEN  
MOB TO MW-245  
SETUP ON MW-245  
1835 SAMPLE MW-245 TAKEN  
1845 CLEAN UP/DEPART SITE FOR PORTLAND.

BY

ASH CREEK ASSOCIATES REPRESENTATIVE

REVIEWED BY

ASH CREEK ASSOCIATES PROJECT MANAGER

		Job Number:	1843-00/T2
Client:	DEQ	Date:	04/25/11
Project:	TAYLOR LUMBER	Sampler:	M. WHITSON
Weather:	OVERCAST (50'S)	Time In/Out:	

[illegible]

## WELL MONITORING DATA SHEET



Ash Creek Associates, Inc.  
Environmental and Geotechnical Consultants

Well I.D.	PZ-105	Job Number:	1843-09/T2
Client:	DEQ	Date:	04/25/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	M. CLOUDY (50%) SW 15M	Time In/Out:	

## WELL DATA

Well Depth:	12.0'	Well Diameter:	2"	Water Height	11.60'
Depth to Water:	3.40' - 3.0' = 0.40'	Screened Interval:	7.7' - 11.7'	x Multiplier	0.162
Water Column Length:	11.60'	Depth to Free Product:	--	x Casing Volumes	3
Purge Volume:	8 GAL	Free Product Thickness:	--	= Purge Volume	1.87
Water Height Multipliers (gal)		1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters
					5.61

## PURGING DATA

Purge Method:	PERISTALTIC				Pump Intake Depth:	2' BELOW WATER SURF.				Comments	
Sampling Method:	LOW FLOW EPA				Tubing Type:	DEDICATED TEFLON					
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
		0.0		GPM	+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
0908	1.87	1.87	5.58	0.15	6.85	10.55	87	3.63	148.7	22.8	CLEAR
0928	1.87	3.74	7.31	"	6.35	10.92	86	1.21	76.1	22.8	"
0932	1.87	5.61	7.52	"	6.29	11.02	86	1.21	98.1	25.8	"
0947	1.87		7.52	"	6.28	11.20	88	0.35	117.9	19.5	"
1000	1.87	7.48	7.52	"	6.27	11.10	89	0.33	119.7	20.3	"

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

## SAMPLING DATA

Sample ID:	PZ-105	Sampling Flow Rate	0.15	Analytical Laboratory:	ESL	
Sample Time:	1015	Final Depth to Water:	4.82'	Did Well Dewater?	YES	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2x 1L AG	NONE	PCP	yes (no)	--	--	--
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

Well I.D.	MW-155	Job Number:	1843-00/T2
Client:	PER	Date:	04/26/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	CLOUDY/RAIN (40's)	Time In/Out:	

Well Depth:	12.5	Well Diameter:	2"	Water Height	9.64
Depth to Water:	2.86	Screened Interval:	7.5-12.5	x Multiplier	0.162
Water Column Length:	9.64	Depth to Free Product:	--	x Casing Volumes	3
Purge Volume:	6.5 GAL	Free Product Thickness:	--	= Purge Volume	1.56
Water Height Multipliers (gal)		1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters

[illegible]

## SAMPLING DATA

Sample ID:	MW-155	Sampling Flow Rate	0.14	Analytical Laboratory:	ESC	
Sample Time:	1/45	Final Depth to Water:	3.12	Did Well Dewater?	No	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2x 1 L AG	--	PCP	yes <u>no</u>	--	--	NO
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

**COMMENTS**

Well I.D.	MW-135
Client:	DEQ
Project:	TAYLOR LUMBER
Weather:	CLOUDY/RAIN (40'S)

Job Number:	1843-00/T2
Date:	04/26/11
Sampler:	RAW
Time In/Out:	

Well Depth:	14'	Well Diameter:	2"	Water Height	10.89'
Depth to Water:	3.11'	Screened Interval:	9'-14'	x Multiplier	0.162
Water Column Length:	10.89'	Depth to Free Product:	--	x Casing Volumes	3
Purge Volume:		Free Product Thickness:	--	= Purge Volume	1.76
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

## SAMPLING DATA

Sample ID:	MW-195	Sampling Flow Rate	0.15	Analytical Laboratory:	BSC	
Sample Time:	1300	Final Depth to Water:	3.89'	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 x 1 L AG		PCP	yes <input checked="" type="radio"/> no			
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

# WELL MONITORING DATA SHEET



Ash Creek Associates, Inc.  
Environmental and Geotechnical Consultants

Well I.D.	MW-12S	Job Number:	1843-00/T2
Client:	PER	Date:	04/26/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	RAIN (40S-50S)	Time In/Out:	

## WELL DATA

Well Depth:	12'	Well Diameter:	6"	Water Height	9.13'
Depth to Water:	2.87'	Screened Interval:	7-12'	x Multiplier	1.46
Water Column Length:	9.13'	Depth to Free Product:	---	x Casing Volumes	3
Purge Volume:	10 GAL	Free Product Thickness:	---	= Purge Volume	13.32
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	39.96

## PURGING DATA

Purge Method:	PERISTALTIC				Pump Intake Depth:	~2' BELOW WATER				Comments	
Sampling Method:	LOW-FLOW				Tubing Type:	DEDICATED TEFLON					
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1347	8.0	8.0	3.98	0.14	6.80	10.04	1,176	6.10	69.1	2.84	C
1352	0.7	8.7	4.02	"	6.78	10.06	1,176	0.38	61.9	2.78	C
1357	0.7	9.4	4.03	"	6.78	10.09	1,174	0.30	60.0	2.70	C
1402	0.7	10.1	4.03	"	6.78	10.12	1,173	0.27	58.5	2.69	C

Clarity: VC = very cloudy, CI = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

## SAMPLING DATA

Sample ID:	MW-12S	Sampling Flow Rate	0.14	Analytical Laboratory:	ESC	
Sample Time:	1410	Final Depth to Water:	4.02	Did Well Dewater?	No	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2X1 LAG	NONE	PCP	yes (no)	--	--	.
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

CALL S. BOSZE, W/ 6" CASING AND 40 GALLONS TO PURGE 3 CASING VOLUMES, USING PERI PUMP WOULD TAKE 4.5 HOURS, PURGE SOME VOLUME AND COLLECT PARAM. EVERY 5 MINS, WHEN VALUES STABILIZE SAMPLE WELL.

0.785 gal

0.785 gal

## WELL MONITORING DATA SHEET



Ash Creek Associates, Inc.  
Environmental and Geotechnical Consultants

Well I.D.	MW-06D	Job Number:	1843-00/T2
Client:	DEQ	Date:	04/26/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	RAIN (40's-50's)	Time In/Out:	

## WELL DATA

Well Depth:	29.2	Well Diameter:	2"	Water Height	26.72'
Depth to Water:	2.48'	Screened Interval:	19.9-29.2'	x Multiplier	0.162
Water Column Length:	26.72'	Depth to Free Product:	---	x Casing Volumes	3
Purge Volume:	5.5 GAL	Free Product Thickness:	---	= Purge Volume	4.32
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	13.00

## PURGING DATA

Purge Method:	PERISTALTIC				Pump Intake Depth:	2' BELOW WATER				Comments	
Sampling Method:	LOW-FLOW				Tubing Type:	DEDICATED TEFLON					
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
				GPM	+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	-- Stabilization Criteria
1448	3.5	3.5	2.99'	0.15	6.62	10.03	1,106	0.55	53.8	2.70	CLEAR
1453	0.5	4.0	2.99'	"	6.58	10.11	1,088	0.43	55.5	0.41	"
1458	0.5	4.5	2.99'	"	6.57	10.12	1,087	0.29	56.3	0.39	"
1503	0.5	5.0	2.99'	"	6.54	10.13	1,072	0.25	56.8	0.38	"
1508	0.5	5.5	2.99'	"	6.52	10.13	1,062	0.27	57.6	0.37	"

Clarity: VC = very cloudy, CI = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

## SAMPLING DATA

Sample ID:	MW-06D	Sampling Flow Rate	0.15	Analytical Laboratory:	ESL	
Sample Time:	1510	Final Depth to Water:	2.50	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2x 1L AG	—	PCP	yes <u>no</u>	—	—	<del>PCP</del> —
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

# WELL MONITORING DATA SHEET



Ash Creek Associates, Inc.  
Environmental and Geotechnical Consultants

Well I.D.	MW-065	Job Number:	1843-00/T2
Client:	DEO	Date:	04/26
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	RAIN (40's-50's)	Time In/Out:	

## WELL DATA

Well Depth:	11.9'	Well Diameter:	2"	Water Height	9.03
Depth to Water:	2.87	Screened Interval:	6.5-11.4'	x Multiplier	0.162
Water Column Length:	9.03'	Depth to Free Product:	--	x Casing Volumes	3
Purge Volume:	6.75 GAL	Free Product Thickness:	--	= Purge Volume	1.90
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	4.90

## PURGING DATA

Purge Method:					Pump Intake Depth:					Comments	
Sampling Method:					Tubing Type:						
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	-- Stabilization Criteria
1537	1.50	1.50	5.02	0.14	7.46	11.16	2,175	9.35	-94.8	0.71	C
1548	1.50	3.00	5.17	"	7.52	12.12	2,781	8.14	-77.5	0.83	C
1558	1.50	4.50	5.28	"	7.60	12.26	3,148	7.19	-73.4	0.79	C
1603	0.75	5.25	4.63	"	7.61	12.16	3,151	6.28	-100.2	0.76	C
1608	0.75	6.00	4.45	"	7.61	12.11	3,147	6.07	-102.5	0.70	C
1613	0.75	6.50	4.23	"	7.62	12.06	3,139	5.72	-106.4	0.67	C

Clarity: VC = very cloudy, CI = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

## SAMPLING DATA

Sample ID:	MW-065	Sampling Flow Rate		Analytical Laboratory:	ESC	
Sample Time:	1620	Final Depth to Water:	4.15'	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2x 1L AG	NONE	PCP	yes <u>no</u>		✓	✓
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS


Well I.D.	MW-95	Job Number:	1843-00/T2
Client:	DEQ	Date:	04/26/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	RAIN (40'S-50'S)	Time In/Out:	1700

Well Depth:	14.3	Well Diameter:	2"	Water Height	8.20
Depth to Water:	6.10	Screened Interval:	6.3'-13.3'	x Multiplier	0.162
Water Column Length:	8.20	Depth to Free Product:	--	x Casing Volumes	1,32 x 3
Purge Volume:	4.25 GAL	Free Product Thickness:	--	= Purge Volume	4.0
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

Purge Method:	PERISTALTIC	Pump Intake Depth:	2' BELOW SURFACE	Comments
Sampling Method:	LOW-FLOW	Tubing Type:	TEFLON	

[illegible]

### SAMPLING DATA

Sample ID:	MW-95	Sampling Flow Rate	0.14	Analytical Laboratory:	ESC	
Sample Time:	1750	Final Depth to Water:	6.59	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2x 1L AG	---	PCP	yes <input checked="" type="radio"/> no	---	---	---
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

Well I.D.	MW-165	Job Number:	1943-00/T2
Client:	DEO	Date:	04/27/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	PARTLY CLOUDY (50S-60S)	Time In/Out:	0710/

Well Depth:	13.5	Well Diameter:	2"	Water Height	10.75
Depth to Water:	2.75	Screened Interval:	8.5-13.5	x Multiplier	0.162
Water Column Length:	10.75	Depth to Free Product:	--	x Casing Volumes	1.75 x 3
Purge Volume:	5.25 GAL	Free Product Thickness:	--	= Purge Volume	5.25
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

## SAMPLING DATA

Sample ID:	MW-16S	Sampling Flow Rate	0.15	Analytical Laboratory:	ESC	
Sample Time:	0800	Final Depth to Water:	3.15	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
Z x 1 L AG	--	PCP	yes <u>no</u>	--	--	MW-16S DUP
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

**COMMENTS**

Well I.D.	PZ-102	Job Number:	1843-00/T2
Client:	DEQ	Date:	04/27
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	MCLEAR (60'S)	Time In/Out:	

Well Depth:	12.2'	Well Diameter:	2"	Water Height	8.8
Depth to Water:	3.40	Screened Interval:	9.12'	x Multiplier	0.162
Water Column Length:	8.80'	Depth to Free Product:	--	x Casing Volumes	1.42 x 3
Purge Volume:	4.5 GAL	Free Product Thickness:	--	= Purge Volume	4.25
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

Purge Method:	PERISTALTIC	Pump Intake Depth:	2' BELOW WATER	Comments
Sampling Method:	LOW-FLOW	Tubing Type:	DEDICATED TEFLON	

[illegible]

### SAMPLING DATA

Sample ID:	PZ-102	Sampling Flow Rate	0.15	Analytical Laboratory:	ESC	
Sample Time:	0850	Final Depth to Water:	3.46'	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2x 1L AG	-- --	PCP	yes no	--	--	--
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

Well I.D.	MW-103S	Job Number:	1843-00/TZ
Client:	DEQ	Date:	04/27/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	CLEAR (60'S)	Time In/Out:	

Well Depth:	16.0'	Well Diameter:	2"	Water Height	12.39'
Depth to Water:	3.61	Screened Interval:	10.5-15.5	x Multiplier	0.162
Water Column Length:	12.39'	Depth to Free Product:	--	x Casing Volumes	2.0 x 3
Purge Volume:	10.25 GAL	Free Product Thickness:	--	= Purge Volume	6.0
Water Height Multipliers (gal)		1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters

[illegible]

## SAMPLING DATA

Sample ID:	MW-1035	Sampling Flow Rate	0.16	Analytical Laboratory:	ESC	
Sample Time:	0950	Final Depth to Water:	3.77	Did Well Dewater?	No	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 x ILAG	--	PCP	yes <input checked="" type="radio"/> no	--	--	--
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

Well I.D.	MW-20S	Job Number:	1243-00/T2
Client:	DEQ	Date:	04/27/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	MOSTLY CLEAR (60's)	Time In/Out:	1000/

Well Depth:	14.5	Well Diameter:	2"	Water Height	11.23
Depth to Water:	5.78' - 2.51' = 3.27	Screened Interval:	40-14.0'	x Multiplier	0.162
Water Column Length:	11.23	Depth to Free Product:	-	x Casing Volumes	x 3
Purge Volume:	5.5 GAL	Free Product Thickness:	-	= Purge Volume	1.80
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	5.4

[illegible]

## SAMPLING DATA

Sample ID:	MW-205	Sampling Flow Rate:	0.15	Analytical Laboratory:	ESC	
Sample Time:	1045	Final Depth to Water:	8.05'	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2x 1L A9	--	PCP	yes <u>no</u>	--	--	--
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

**COMMENTS**

Well I.D.	MW-19S	Job Number:	1843-06/T2
Client:	DEQ	Date:	04/27/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	P. CLOUDY (50's-60's)	Time In/Out:	1055/

Well Depth:	15.5'	Well Diameter:	2"	Water Height	12.66
Depth to Water:	5.06 - 2.22' = 2.84'	Screened Interval:	5.0 - 15.1'	x Multiplier	0.162
Water Column Length:	12.66	Depth to Free Product:	--	x Casing Volumes	2.05 x 3
Purge Volume:	6.25 GAL	Free Product Thickness:	--	= Purge Volume	6.15
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

## SAMPLING DATA

Sample ID:	MW-195	Sampling Flow Rate	0.14	Analytical Laboratory:	ESC	
Sample Time:	1150	Final Depth to Water:	6.14'	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 x 1L AG	--	PCP	yes <u>no</u>	--	--	--
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

Well I.D.	PZ-101	Job Number:	1843-00/T2
Client:	PER	Date:	04/27/11
Project:	TAYLOR LUMBER	Sampler:	M.W
Weather:	M. CLEAR (60'S)	Time In/Out:	1200

Well Depth:	13.5	Well Diameter:	2"	Water Height	11.66
Depth to Water:	352 - 168 = 1.84	Screened Interval:	7-13.0'	x Multiplier	0.182
Water Column Length:	11.66	Depth to Free Product:	--	x Casing Volumes	1.88 x 3
Purge Volume:	7.5 GAL	Free Product Thickness:	--	= Purge Volume	5.64
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

### SAMPLING DATA

Sample ID:	PZ-101	Sampling Flow Rate:	0.15	Analytical Laboratory:	ESC	
Sample Time:	1300	Final Depth to Water:	7.89'	Did Well Dewater?	YES	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2x 1L AG	--	PCP	yes <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">no</span>	--	--	--
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

### COMMENTS

## WELL MONITORING DATA SHEET



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Well I.D.	MW-15	Job Number:	1843-00/T2
Client:	DEQ	Date:	04/27/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	CLOUDY (60's)	Time In/Out:	1310/

## WELL DATA

Well Depth:	15'	Well Diameter:	2"	Water Height	11.97
Depth to Water:	3.03	Screened Interval:	9.5-14.5	x Multiplier	0.162
Water Column Length:	11.97	Depth to Free Product:	--	x Casing Volumes	1.94
Purge Volume:	6.0 GAL	Free Product Thickness:	--	= Purge Volume	x3
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	5.82

## PURGING DATA

Purge Method:	PERISTALTIC PUMP				Pump Intake Depth:	2.5' BELOW WATER				Comments	
Sampling Method:	LOW-FLOW				Tubing Type:	DEDICATED TEFLON					
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	-- Stabilization Criteria
1335	1.94	1.94	4.50	0.16	7.01	12.98	129.7	0.22	129.1	9.89	C
1345	1.94	3.88	4.59	"	6.99	13.69	1318	0.15	109.4	1.44	C
1355	1.94	5.82	4.60	"	6.99	13.70	1323	0.14	99.4	1.37	C

Clarity: VC = very cloudy, CI = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

## SAMPLING DATA

Sample ID:	MW-15	Sampling Flow Rate	0.16'	Analytical Laboratory:	ESC	
Sample Time:	1400	Final Depth to Water:	4.51'	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2x 1 L AG	--	PCP	yes <u>no</u>	--	--	--
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

Well I.D.	MW-11S	Job Number:	1843-00/T2
Client:	DEQ	Date:	04/27/11
Project:	TAYLOR LUMBER	Sampler:	M.W
Weather:	CLOUDY (60's)	Time In/Out:	1410

Well Depth:	19.75	Well Diameter:	2"	Water Height	16.8
Depth to Water:	2.70'	Screened Interval:	6.5-17.5	x Multiplier	0.162
Water Column Length:	16.8	Depth to Free Product:	--	x Casing Volumes	<del>3</del> 2.7 x 3
Purge Volume:	8.25 GAL	Free Product Thickness:	--	= Purge Volume	8.0
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

## SAMPLING DATA

Sample ID:	MW-115	Sampling Flow Rate	0.16	Analytical Laboratory:	ESC	
Sample Time:	1505	Final Depth to Water:	2.97'	Did Well Dewater?	No	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 x 16 AG	--	PCP	yes <u>no</u>	--	--	--
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

**COMMENTS**

Well I.D.	MW-255	Job Number:	1843-00 / T2
Client:	DEQ	Date:	04/27/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	CLOUDY/LIGHT RAIN (40's)	Time In/Out:	1520/

Well Depth:	19.3'	Well Diameter:	2"	Water Height	13.22
Depth to Water:	6.08	Screened Interval:	7.1-17.1	x Multiplier	0.162
Water Column Length:	13.22'	Depth to Free Product:	--	x Casing Volumes	2.14
Purge Volume:	6.5 GAL	Free Product Thickness:	--	= Purge Volume	6.42
Water Height Multipliers (gal)		1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters

[illegible]

## SAMPLING DATA

Sample ID:	MW-255	Sampling Flow Rate	0.15	Analytical Laboratory:	ESC	
Sample Time:	1610	Final Depth to Water:	6.78	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 x 1 L AG	--	ACP	yes <input checked="" type="radio"/> no	--	--	--
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

Well I.D.	RW-01	Job Number:	1843-00/T2
Client:	DEQ	Date:	04/27/11
Project:	TAYLOR LUMBER GWM	Sampler:	mw
Weather:	OVERCAST CLOUDY (50%)	Time In/Out:	

Well Depth:	UNKNOWN		Well Diameter:	UNKNOWN	Water Height	
Depth to Water:	UNKNOWN		Screened Interval:		x Multiplier	
Water Column Length:			Depth to Free Product:		x Casing Volumes	
Purge Volume:			Free Product Thickness:		= Purge Volume	
Water Height Multipliers (gal)		1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

## SAMPLING DATA

**COMMENTS**

NOTE: PURGED TAP FOR 10 MINUTES AT FULL FLOW BEFORE LOWERING PURGE RATE AND COLLECTING PARAMETERS



Well I.D.	MW-105	Job Number:	1843-00/T2
Client:	DER	Date:	04/27/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	RAIN (50's/60's)	Time In/Out:	

Well Depth:	11.5'	Well Diameter:	2"	Water Height	1.97
Depth to Water:	9.53	Screened Interval:	4.5-9.5	x Multiplier	<del>0.162</del> 0.162
Water Column Length:	1.97	Depth to Free Product:	--	x Casing Volumes	0.32 x 3
Purge Volume:		Free Product Thickness:	--	= Purge Volume	0.95
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

## SAMPLING DATA

Sample ID:	MW-105	Sampling Flow Rate:	0.11	Analytical Laboratory:	ESC	
Sample Time:	1745	Final Depth to Water:	10.01	Did Well Dewater?	No	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2x 1L Ag	--		yes <u>no</u>	--	--	--
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

Well I.D.	MW-24S	Job Number:	1843-00/12
Client:	DER	Date:	04/27/11
Project:	TAYLOR LUMBER	Sampler:	MW
Weather:	RAIN (50s)	Time In/Out:	

Well Depth:	17.2'	Well Diameter:	2"	Water Height	4.76
Depth to Water:	12.94	Screened Interval:	8.5-13.5	x Multiplier	0.162
Water Column Length:	4.76	Depth to Free Product:	--	x Casing Volumes	0.7 x 3
Purge Volume:	3.0 GAL	Free Product Thickness:	--	= Purge Volume	2.1
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

[illegible]

## SAMPLING DATA

Sample ID:	MW-245	Sampling Flow Rate	0.14	Analytical Laboratory:	ESC	
Sample Time:	1835	Final Depth to Water:	14.19	Did Well Dewater?	No	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
2 x 1L AG	--	PCP	yes <u>no</u>	--	--	--
			yes no			
			yes no			
			yes no			
			yes no			
			yes no			

## COMMENTS

## ***Appendix B***

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**Copy of Ash Creek 2011 *Groundwater Monitoring Work Plan***

*Groundwater Monitoring Work Plan  
Former Taylor Lumber Site  
Sheridan, Oregon*

Prepared for:  
Oregon Department of Environmental Quality

April 22, 2011  
1843-00



Ash Creek Associates, Inc.  
Environmental and Geotechnical Consultants

## **Groundwater Monitoring Work Plan Former Taylor Lumber Site Sheridan, Oregon**

Prepared for:  
Oregon Department of Environmental Quality

April 22, 2011  
1843-00

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Stephanie Bosze, R.G.  
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EXPIRES: DEC. 31, 2011

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### **Table**

- 1      Monitoring Plan

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### **Appendices**

- A      Health and Safety Plan
- B      Sampling and Analysis Plan



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## **1.0 Introduction**

This Groundwater Monitoring Work Plan presents the scope of work for groundwater monitoring activities at the former Taylor Lumber and Treating (TLT) Superfund Site located at 22125 SW Rock Creek Road in Yamhill County, Sheridan, Oregon (Site; Figure 1). This Work Plan was prepared for the Oregon Department of Environmental Quality (DEQ) under Task 2 of Task Order No. 57-08-28. This Work Plan covers two annual monitoring events to be conducted in April 2011 and April 2012. The specific scope of work is the same for each event.

### **1.1 Background**

The Site is a wood treating facility that was operated by TLT from 1946 until 2001, when TLT filed for bankruptcy. Pacific Wood Preserving of Oregon (PWPO) entered into a Prospective Purchaser Agreement with the U.S. Environmental Protection Agency (EPA) and purchased the wood treatment portion of the facility. PWPO began operations at the Site in 2002 and is currently treating wood using copper- and borate-based solutions.

A Record of Decision (ROD) for the Site was signed on September 30, 2005 (EPA, 2005). In accordance with the ROD, contaminated soils have been removed from the Site. However, contaminated soils and groundwater remain within the treatment plant area at the Site, enclosed by a soil-bentonite barrier wall. A low-permeability asphalt cap has been placed over the entire area enclosed by the barrier wall, which impedes the infiltration of stormwater into the groundwater located within the barrier wall. Four groundwater extraction wells have been installed within the barrier wall to stimulate an inward hydraulic gradient and prevent water from rising above the cap (EPA, 2010). The ROD identifies pentachlorophenol (PCP) as the contaminant of concern (COC) in Site groundwater (EPA, 2005).

### **1.2 Objective**

The primary objective of the groundwater monitoring program is to confirm that PCP impacted groundwater is not migrating beyond the barrier wall to the Yamhill River to the south or across Rock Creek Road to residential wells.

### **1.3 Scope of Work**

In March 2010, the EPA prepared a Long-Term Groundwater Monitoring and Reporting Plan (EPA Work Plan) for the Site (EPA, 2010). The plan outlined a groundwater monitoring program for the Site including field sampling procedures, quality assurance/quality control (QA/QC) evaluation, sampling handling, and documentation procedures. This Work Plan incorporates the major components of the EPA Work Plan.



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The following scope of work, as excerpted from the EPA Work Plan, will accomplish the primary project objective as described in Section 1.2:

- 1) Groundwater samples will be collected for PCP analysis from 19 monitoring wells located outside the barrier wall.
- 2) Groundwater samples will be collected for PCP analysis from residential wells RW-01 and RW-02.
- 3) Water quality parameters will be measured prior to sampling to determine water stability during purging and to qualify the representativeness of the samples.
- 4) Water levels will be measured in each of the above-referenced monitoring wells as well as in extraction wells PW-01 through PW-04, located within the barrier wall.
- 5) For health and safety purposes, organic vapors will be measured in the well headspace prior to monitoring and sampling activities.

These activities are discussed in further detail within this Work Plan. Table 1 lists the groundwater and residential wells that will be gauged and sampled as part of the Site monitoring program. The location of the monitoring, extraction, and residential wells included in the monitoring program are shown on Figure 2.

## **2.0 Groundwater Monitoring Activities**

The groundwater monitoring program will include preparatory activities, collection of groundwater elevation measurements, and collection of groundwater samples for chemical analysis.

### **2.1 Preparatory Activities**

**Site Health and Safety Plan.** A Site-specific health and safety plan (HASP) has been prepared for the proposed activities. Appendix A includes a copy of the HASP. The HASP was prepared in general accordance with the Occupational Safety and Health Act (OSHA) and the Oregon Administrative Rules (OAR). A copy of the HASP will be maintained on-site during the field activities.

**Property Access.** PWPO will be contacted a minimum of one week prior to each field event. Prior to entering the site, field staff will also check in at the PWPO main office. The main office is located at 22125 Rock Creek Road, with the primary entrance located off Highway 18B.

**Residential Notifications.** One monitoring well (MW-9S) and two residential water wells (RW-01 and RW-02) are located off-site, as shown on Figure 2. The owners of these properties will be notified a minimum of one week prior to sampling. Contact information for the residents is provided in the EPA Work Plan (EPA, 2010).



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## 2.2 Documentation of Well Conditions

Prior to sampling, Site conditions will be recorded including temperature, precipitation, wind direction, and any other factors that could affect sample quality. The well monuments will be inspected for signs of damage, and will be noted accordingly in the field notes. The current well locks will be cut off with a bolt cutter and replaced with new locks that utilize a common key. The DEQ project manager and key project personnel will be provided with a copy of the well key.

Prior to sampling, the headspace around each well will be screened for organic vapors using a photoionization detector (PID). Headspace concentrations will be documented in the field notes and any volatiles will be allowed to dissipate before sampling.

## 2.3 Groundwater Elevation Measurements

Groundwater elevation measurements will be collected in accordance with the EPA Work Plan (EPA, 2010). Wells in which water levels will be measured are listed in Table 1. It is possible there will be a difference in air pressure between the air in the casing and barometric pressure at the time of collecting well measurements. Since such a differential pressure could affect water level results, the well lids and caps will be opened for at least five minutes before making measurements so that the air pressure has adequate time to equilibrate. Water level measurements will be measured with an electronic water level probe and recorded on the appropriate field data sheet with an accuracy of  $\pm 0.01$  foot.

## 2.4 Groundwater Sampling

Groundwater samples will be collected from the wells listed in Table 1.

**Well Purging.** Groundwater will be purged before sampling using dedicated Teflon tubing and a peristaltic pump. Field parameters, including temperature, pH, dissolved oxygen, oxidation-reduction potential, specific conductivity, and turbidity will be collected during the purging process using a flow-through cell. Detailed groundwater sampling procedures are described in the sampling and analysis plan (SAP; Appendix B).

**Well Sampling.** Groundwater sampling will be conducted in accordance with Ash Creek's standard operating procedures (SOPs) which are included in the SAP (Appendix B). Where the SOPs differ from the EPA Work Plan, procedures are typically deferred to those outlined in the EPA Work Plan, and are denoted accordingly in the SAP.

**Purging and Sampling of Residential Wells.** The locations of the two off-site residential wells are shown on Figure 2. Well RW-01 is located to the west of the Site and will be accessed from the faucet at the pump house that is facing Highway 18. Well RW-02 is located three houses east of Rock Creek Road on



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Highway 18. The well is located at the northwest corner of the house. The specific location of the RW-02 and type of sampling port present (i.e., borehole, tap, etc.) will be verified by the property owner.

Water taps will be opened and allowed to run for approximately 10 minutes to clear the system (including a pressure equalizing tank, if present) of residual water in the piping. Following the system purge, a sample will be collected from the tap for measurement of field parameters. The tap will be allowed to run for another 3 minutes before collecting another sample for the measurement of field parameters (pH, electrical conductivity, temperature). This procedure will be repeated until field parameters stabilized to within 10 percent of the previous measurements for three successive measurements. Following completion of "purging" procedures as described above, the groundwater sample will be collected directly from the tap. Sample containers will be provided by the laboratory ready for sample collection, including preservative.

Procedures for labeling and storing the samples are summarized in the SAP (Appendix B).

## **2.5 Handling of Investigation-Derived Waste**

Investigation-derived waste (IDW) will consist of purge water and decontamination water. IDW will be temporarily placed in buckets or drums and will be transported to and disposed of in the drain located to the north of the stormwater treatment system (Figure 2). The Site operations manager will direct field staff to the location of the drain. At a minimum, buckets will be emptied into the drain prior to the end of each field day. Disposable items, such as gloves, paper towels, etc., will be placed in plastic bags after use and deposited in trash receptacles for disposal.

## **3.0 Analytical Program**

Groundwater samples collected from the monitoring wells and residential water wells during both monitoring events will be analyzed for PCP by EPA Method 8270 SIM. Additional information on the analytical program, including sample handling procedures, required analytical reporting limits, preservation requirements, and sample hold times, are summarized in the SAP (Appendix B).

## **4.0 Quality Assurance and Quality Control**

QA/QC procedures will be used throughout this project. The SAP in Appendix B includes the QA plan for this project. This plan includes sampling and custody procedures, QA sampling analyses (such as analysis of duplicates), detection limit goals, laboratory QC, and QA reporting. Groundwater sampling will be conducted in accordance with the QA/QC requirements outlined in the EPA Work Plan (EPA, 2010).



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## **5.0 Annual Reporting**

Following each annual monitoring event, a groundwater monitoring report will be prepared and submitted to the DEQ. The quarterly monitoring report will include the following components:

- Summary of field events;
- Summary of problems encountered or deviations from monitoring program;
- Summary table with validated analytical results;
- Summary table with water level measurements;
- Groundwater elevation contour maps; and
- Analytical laboratory testing program and documentation (including a QA review).

The 2011 annual monitoring report will initially be prepared as a draft for review by the DEQ. Upon receipt of DEQ's comments, Ash Creek will issue the report in final form. The 2012 report will incorporate DEQ's comments on the 2011 report, and will be submitted only in final form.

## **6.0 References**

- U.S. Environmental Protection Agency (EPA), 2005. *Final Record of Decision Taylor Lumber and Treating Superfund Site, Sheridan, Oregon*. September 30, 2005.
- EPA, 2010. *Long-term Groundwater Monitoring and Reporting Plan. Taylor Lumber and Treating Superfund Site*. March, 2010.



Table 1  
Monitoring Program  
Taylor Lumber and Treating

Well I.D.	Wells to be Sampled	Water Level Measurements*
<b>Outside Barrier Wall</b>		
MW-1S	X	X
MW-6S	X	X
MW-6D	X	X
MW-9S	X	X
MW-12S	X	X
MW-13S	X	X
MW-15S	X	X
MW-16S	X	X
MW-19S	X	X
MW-20S	X	X
MW-25S	X	X
MW-103S	X	X
PZ-101	X	X
PZ-102	X	X
PZ-105	X	X
<b>South of Highway 18B</b>		
MW-9S	X	X
MW-10S	X	X
MW-24S	X	X
<b>East of Rock Creek Road</b>		
MW-11S	X	X
<b>Residences**</b>		
RW-01	X	
RW-02	X	
<b>Extraction Wells Inside Barrier Wall</b>		
PW-1		X
PW-02		X
PW-03		X
PW-04		X

1. PCP = pentachlorophenol.
2. \* = Indicates wells in which water level measurements will be collected.
3. \*\* = Residential addresses and contact information are as follows:

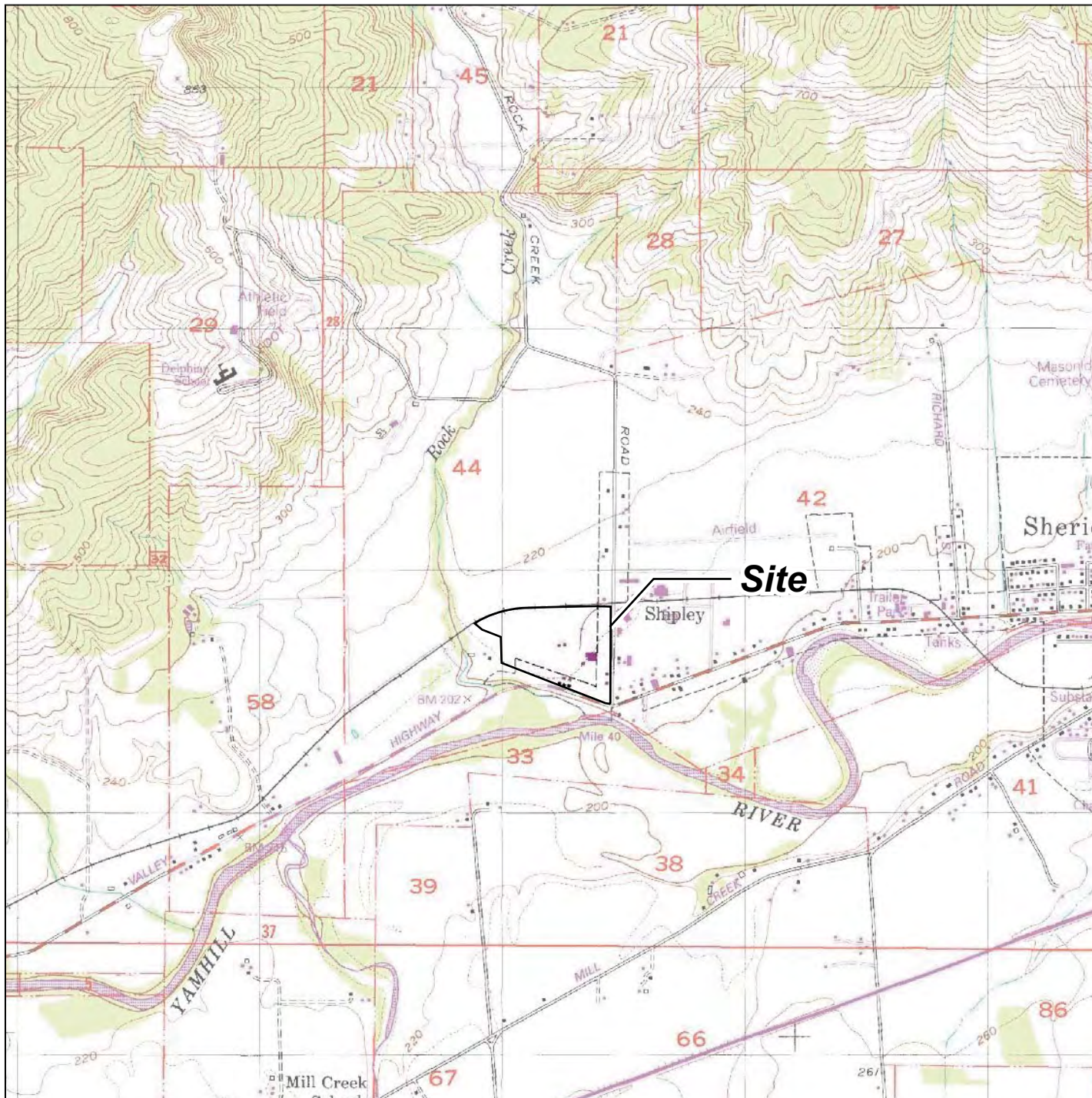
**RW- 01:** 31100 West Valley Highway - Residential property owned by Bob Bowman - 503-843-2530

**RW-02:** 1523 W. Main Street - Ash Creek to verify residential contact information.

(Brown house; 3rd house from Rock Creek Road)

**MW-9S:** Residential property owned by Robert and Patricia Harris - 503-472-8017

**MW-11S:** Northwest Gazebo - George Gabriel owner - 503-843-0024



**Note:** Base map prepared from USGS 7.5-minute quadrangle of Sheridan, OR, revised 1992 as provided by MSR Maps.com.

0 2,000 4,000  
Approximate Scale in Feet



## Site Location Map

Groundwater Monitoring Work Plan  
Former Taylor Lumber Site  
Sheridan, Oregon



Ash Creek Associates, Inc.  
Environmental and Geotechnical Consultants

Project Number 1843-00

April 2011

Figure

1



## ***Appendix A***

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### **Health and Safety Plan**

## Record of Health and Safety Communication

PROJECT NAME: DEQ - Former Taylor Lumber Project			
SITE CONTAMINANTS: Pentachlorophenol			
<b>PPE REQUIREMENTS (check all that apply):</b>			
<input checked="" type="checkbox"/> Safety Glasses	<input checked="" type="checkbox"/> Clothing : Safety Vest		
<input checked="" type="checkbox"/> Safety Boots	<input type="checkbox"/> Respiratory Protection :		
<input checked="" type="checkbox"/> Hard Hat	<input type="checkbox"/> Other :		
<input checked="" type="checkbox"/> Gloves :			
<p>The following personnel have reviewed a copy of the Summary Information regarding the Site, and the General Health and Safety Plan (and attachments). By signing below, these personnel indicate that they have read the plan, including all referenced information, and that they understand the requirements which are detailed for this project.</p>			
PRINTED NAME	SIGNATURE	COMPANY	DATE

## **Appendix A – Site-Specific Health and Safety Plan**

### **1.0 Introduction**

This Health and Safety Plan (HASP) includes both Site-specific information (including Site-specific activities, health hazards, route to hospital, and toxicity information) and the general Ash Creek Associates (Ash Creek) Health and Safety Plan (General HASP).

#### **1.1 Emergency Contact Summary**

<b>SITE LOCATION</b>	22125 SW Rock Creek Road, Sheridan, OR
<b>NEAREST HOSPITAL</b>	West Valley Hospital 525 Southeast Washington Street Dallas, OR 97338-2834 (See HASP-1) Telephone ..... (503) 842-4444
<b>EMERGENCY RESPONDERS</b>	Police Department ..... 9-1-1 Fire Department ..... 9-1-1 Ambulance ..... 9-1-1
<b>EMERGENCY CONTACTS</b>	Ash Creek Associates ..... (503) 924-4704 National Response Center ..... (800) 424-8802 Oregon Accident Response System ..... (800) 452-0311 Environmental Response Team ..... (503) 283-1150 Poison Control Center ..... (800) 222-1222 Chemtrec ..... (800) 424-9300

In the event of an emergency, call for help as soon as possible. Give the following information:

- WHERE the emergency is (use cross-streets or landmarks)
- PHONE NUMBER you are calling from
- WHAT HAPPENED (type of injury)
- HOW MANY persons need help
- WHAT is being done for the victim(s)
- YOU HANG UP LAST (let the person you called hang up first)

### **2.0 Corporate Health and Safety Plan**

The Ash Creek General HASP, together with the included Site-specific information, cover each of the 11 required plan elements as specified in OSHA 1910.120, and meets all applicable regulatory requirements. The reader is advised to thoroughly review the entire plan.



### **3.0 Site-Specific Health and Safety Plan**

#### **3.1 Site Location and Description**

LOCATION: 22125 SW Rock Creek Road, Sheridan, OR

LAND USE OF AREA SURROUNDING FACILITY: Industrial

#### **3.2 Site Activity Summary**

SITE ACTIVITIES: Groundwater sampling.

PROPOSED DATE OF ACTIVITY: April 2011 and April 2012.

POTENTIAL SITE CONTAMINANTS: Pentachlorophenol.

POTENTIAL ROUTES OF ENTRY: Potential routes of entry include skin contact with soil and groundwater, incidental ingestion of soil and groundwater, and inhalation of dust and volatiles.

PROTECTIVE MEASURES: Engineering controls, safety glasses, safety boots, hard hat, gloves, protective clothing, and respirators (as necessary).

MONITORING EQUIPMENT: Photoionization detector (PID) with 10.2 eV Lamp; olfactory indications.

#### **3.3 Chain of Command**

The chain of command for health and safety in this project involves the following individuals:

CORPORATE HEALTH AND SAFETY MANAGER: Mike Stevens, P.E.

PROJECT MANAGER: Stephanie L. Bosze, R.G..

PROJECT HEALTH AND SAFETY OFFICER: Stephanie L. Bosze, R.G.

FIELD HEALTH AND SAFETY MANAGER: Ian Maguire

#### **3.4 Hazard Analysis and Applicable Safety Procedures**

The following work tasks will be accomplished:

- 1) Groundwater sampling

The associated hazards for the above activities that may be anticipated during this project are discussed in detail below.



## ***Appendix A – Site-Specific Health and Safety Plan***

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### **3.4.1 Groundwater Monitoring**

Any sampling will occur under the assumption the media is contaminated and appropriate personnel protection will be required.

### **3.4.2 Air Monitoring and Action Levels**

**PID Monitoring.** Air monitoring will be conducted with a PID with 10.2 eV lamp, or equivalent, to measure organic vapor concentration during Site work activities (the 10.2 eV lamp is specified to allow detection of halogenated compounds). Background PID measurements will be taken prior to the start of groundwater monitoring to quantify levels associated with the ambient air space in the vicinity of the Site. Subsequent PID measurements will be taken when well caps are initially removed for sampling. If PID measurements are elevated relative to the previously measured background levels, then sampling will be deferred to allow vapors to dissipate. PID measurements shall be consistent with background prior to sampling activities.

**Olfactory.** If olfactory senses detect any unfamiliar odor, work will stop until an assessment can be made to determine whether the need exists to upgrade protective measures.

## **3.5 Chemicals of Concern**

Based on Site information gathered to date, the following chemical may be present at the Site:

- Pentachlorophenol (PCP)

### **3.5.1 Toxicity Information**

Pertinent toxicological properties of the chemicals of concern are discussed below. This information generally covers potential toxic effects which may occur from relatively significant acute and/or chronic exposures, and is not meant to indicate that such effects will occur from the planned Site activities. In general, the chemicals which may be encountered at the Site are not expected to be present at concentrations that could produce significant exposures. The types of planned work activities should also limit potential exposures at the Site. Furthermore, appropriate protective and monitoring equipment will be used, as discussed below, to further minimize any exposures that might occur.

Standards for occupational exposures to these chemicals are included where available. Site exposures are generally expected to be of short duration and well below the level of any of these exposure limits. These standards are presented below.

PEL      Permissible Exposure Limit (Occupational Safety and Health Act [OSHA])

REL      Recommended Exposure Limit (NIOSH)



## Appendix A – Site-Specific Health and Safety Plan

- IDLH Immediately Dangerous to Life and Health (NIOSH)
- TWA Time-Weighted Average (exposure limit for any eight-hour work shift of a 40-hour work week)
- STEL Short-Term Exposure Limit (expressed as a 15-minute, time-weighted average, and not to be exceeded at any time during a work day)
- C Ceiling Exposure Limit (not to be exceeded at any time during a work day)

The table below lists the exposure limits recommended by OSHA and NIOSH for each of the listed compounds. Respiratory protection will be required if measured concentrations in air exceed the minimum of these exposure limits.

### Recommended Exposure Limits

Compound	OSHA PEL [ppm]	NIOSH REL [ppm]	IDLH [ppm]	TWA [ppm]
Pentachlorophenol	0.05	0.05	0.25	0.05

*Note:* ppm = Parts per million.

**Pentachlorophenol.** Pentachlorophenol is a synthetic substance, made from other chemicals, and does not occur naturally in the environment. It is made by only one company in the United States. At one time, it was one of the most widely used biocides in the United States. Since 1984, the purchase and use of pentachlorophenol has been restricted to certified applicators. It is no longer available to the general public. Application of pentachlorophenol in the home as an herbicide and pesticide accounted for only 3% of its consumption in the 1970s. Before use restrictions, pentachlorophenol was widely used as a wood preservative. It is now used industrially as a wood preservative for power line poles, cross arms, fence posts, and the like. Pure pentachlorophenol exists as colorless crystals. It has a very sharp characteristic phenolic smell when hot but very little odor at room temperature. Most people can begin to smell pentachlorophenol in water at less than 12 parts pentachlorophenol per million parts of water (ppm). Impure pentachlorophenol (the form usually found at hazardous waste sites) is dark gray to brown and exists as dust, beads, or flakes. Pentachlorophenol can be found in two forms: pentachlorophenol itself or as the sodium salt of pentachlorophenol. The sodium salt dissolves easily in water, but pentachlorophenol does not. These two forms have some different physical properties, but are expected to have similar toxic effects. Humans are generally exposed to technical-grade pentachlorophenol, which usually contains such toxic impurities as polychlorinated dibenzo- p-dioxins and dibenzofurans.

The physical and chemical properties of the compound suggest that not much will evaporate into the atmosphere and that most of it will move with water and generally stick to soil particles. Movement of pentachlorophenol in soils depends on the soil's acidity. The compound can be present in fish or other species used for food, as demonstrated by the ongoing food monitoring program of the Food and Drug



## ***Appendix A – Site-Specific Health and Safety Plan***

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Administration (FDA). In air, soil, and surface water, pentachlorophenol lasts for hours to days. The compound is broken down in soil and surface water by microorganisms, and in air and surface water by sunlight, to other compounds, some of which may be harmful to humans.

Pentachlorophenol easily enters your body through your lungs when you breathe it, through your digestive tract after you eat contaminated food or water, or through your skin. The most significant ways are through breathing and skin contact. After a short exposure period, pentachlorophenol quickly leaves your body (studies in humans show that half the amount taken in is usually gone within 33 hours). It does not seem to build up in the body very much. Most of the pentachlorophenol taken into your body does not break down, but instead leaves in your urine. Much smaller amounts leave in your feces. Only a small amount escapes through your exhaled air. Some of the pentachlorophenol taken into your body is joined with other natural chemicals that make the pentachlorophenol less harmful. The combined product can then leave your body more easily.

Some, but not all, of the harmful effects associated with exposure to pentachlorophenol are due to impurities present in commercial pentachlorophenol. Short exposures to large amounts of pentachlorophenol in the workplace or through the misuse of products that contain it can cause harmful effects on the liver, kidneys, blood, lungs, nervous system, immune system, and gastrointestinal tract. Contact with pentachlorophenol (particularly in the form of a hot vapor) can irritate the skin, eyes, and mouth. If large enough amounts enter the body, heat is produced by the cells in the body, causing an increase in body temperature. The body temperature can increase to dangerous levels, causing injury to various organs and tissues and even death. This effect is the result of exposure to pentachlorophenol itself and not the impurities. The lengths of exposure and the levels that cause harmful effects have not been well defined. Long-term exposure to low levels such as those that occur in the workplace can cause damage to the liver, kidneys, blood, and nervous system. Studies in animals also suggest that the endocrine system and immune system can also be damaged following long-term exposure to low levels of pentachlorophenol. All of these effects get worse as the level of exposure increases. Decreases in the number of newborn animals, harmful effects on reproductive organs of the mothers, decreases in the number of successful pregnancies, and increases in the length of pregnancy were observed in animals exposed to pentachlorophenol while they were pregnant. Harmful effects on reproductive organs of the females were also seen in animals exposed to pentachlorophenol while they were not pregnant. We do not know if pentachlorophenol produces all of the same effects in humans that it causes in animals.

An increased risk of cancer has been shown in some laboratory animals given large amounts of pentachlorophenol orally for a long time. There is weak evidence that pentachlorophenol causes cancer in humans. The International Agency for Research on Cancer (IARC) has determined that pentachlorophenol is possibly carcinogenic to humans, and the EPA has classified pentachlorophenol as a probable human carcinogen.



## ***Appendix A – Site-Specific Health and Safety Plan***

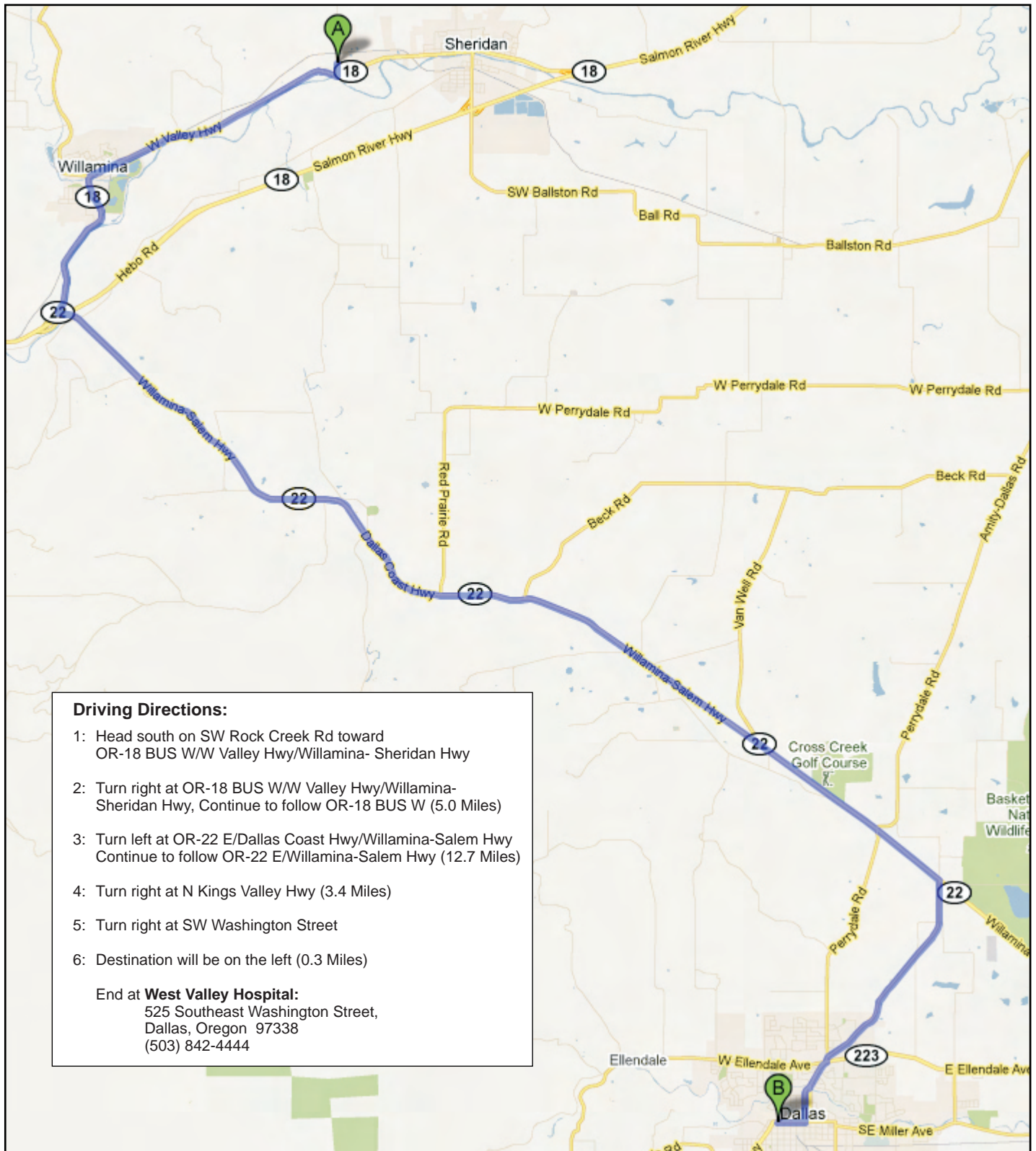
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The federal government has set regulatory standards and guidelines to protect workers from the possible health effects of pentachlorophenol in air. OSHA has set a legally enforceable limit of 0.5 milligrams per cubic meter (mg/m<sup>3</sup>) in workroom air to protect workers during an 8-hour shift over a 40-hour work week.

Pentachlorophenol and its products can be measured in the blood, urine, and tissues of exposed persons. Because urine and blood samples are easily collected, testing these fluids is the best way to find out whether a person has been exposed. Neither test is usually available at a doctor's office because both require the use of special equipment. Although these tests can prove that a person has been exposed, they cannot be used to tell how severe any health effects might be. Because pentachlorophenol leaves the body fairly quickly, these tests are best for finding exposures that occurred within the last several days. Exposure at hazardous waste sites usually includes exposure to other organic compounds, such as hexachlorobenzene, that could break down into pentachlorophenol. On the other hand, measurement of blood and urine levels for pentachlorophenol and its products in groups of exposed people and non-exposed people is a good way to tell whether exposure to pentachlorophenol or members of the same chemical family occurred.

The federal government has also set regulatory standards and guidelines to protect the public from the possible health effects of pentachlorophenol in drinking water. EPA decided that the amount in the drinking water should not be more than 0.022 milligram per liter (mg/L) and that any release of more than 10 pounds to the environment should be reported. For short-term exposures, EPA decided that drinking water levels should not be more than 1.0 mg/L for 1 day or 0.3 mg/L for 10 days. EPA also estimates that for an average-weight adult, exposure to 0.03 mg/kg/day will probably not cause any non-cancer health effects. EPA is now working to measure the levels of pentachlorophenol found at abandoned waste sites.





Base map prepared from 2011 Google Map data.

## Route to Hospital

Groundwater Monitoring Work Plan  
 Former Taylor Lumber Site  
 Sheridan, Oregon



Ash Creek Associates, Inc.  
 Environmental and Geotechnical Consultants

Project Number 1843-00

April 2011

Figure  
**HSP-1**

## ***Appendix B***

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### **Safety and Analysis Plan**

### **1.0 Introduction**

This appendix presents the field and sampling procedures and the analytical testing program that will be used to complete the field and analytical work for this project. Quality assurance and quality control (QA/QC) procedures are also discussed in this appendix.

### **2.0 Field and Sampling Procedures**

The scope of work for the Site includes two annual groundwater monitoring events. The field and sampling procedures include the following:

- Preparatory activities;
- Well headspace measurements with a photoionization detector (PID);
- Groundwater elevation measurements;
- Collection of groundwater samples;
- Sample management (i.e., containers, storage, and shipment);
- Decontamination procedures; and
- Handling of investigation-derived waste (IDW).

#### **2.1 Preparatory Activities**

**Site Health and Safety Plan.** A Site-specific health and safety plan (HASP) has been prepared for the proposed activities. Appendix A of the Work Plan includes a copy of the HASP. The HASP was prepared in general accordance with the Occupational Safety and Health Act (OSHA) and the Oregon Administrative Rules (OAR). A copy of the HASP will be maintained on site during the field activities.

**Property Access.** PWPO will be contacted a minimum of one week prior to each field event. Prior to entering the site, field staff will also check in at the PWPO main office. The main office is located at 22125 Rock Creek Road, with the primary entrance located off Highway 18B.

**Residential Notifications.** One monitoring well (MW-9S) and two residential water wells (RW-01 and RW-02) are located off site as shown on Figure 2. The owners of these properties will be notified a minimum of one week prior to sampling. Contact information for the residents is provided in the EPA Work Plan (EPA, 2010).



## **Appendix B – Sampling and Analysis Plan**

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### **2.2 PID Headspace Measurements**

Prior to sampling, the headspace around each well will be screened for organic vapors using a photoionization detector (PID). Headspace concentrations will be documented in the field notes and any volatiles will be allowed to dissipate before sampling.

### **2.3 Groundwater Elevation Measurements**

Water level measurements will be collected in general accordance with Ash Creek's Standard Operating Procedure (SOP) 2.16 for water level measurement procedures, provided in this appendix. The referenced SOP is in agreement with water level measurement procedures outlined in the EPA Work Plan (EPA, 2010). Water level measurements will be collected from site wells at the beginning of the monitoring event. Well covers and well caps will be opened and the water level will be allowed to equilibrate under atmospheric conditions for at least five minutes before water level measurements are taken. Water level measurements will be recorded in the field notes.

### **2.4 Collection of Groundwater Samples**

Ash Creek will collect groundwater samples from site monitoring wells and off-site water wells annually in accordance with low-flow sampling techniques described in SOP 2.5, included in this appendix. The referenced SOP is in agreement with groundwater sampling procedures outlined in the EPA Work Plan (EPA, 2010). Groundwater samples will be collected using dedicated tubing and a peristaltic pump. A minimum of three casing volumes will be purged prior to sampling. During purging, field parameters will be collected using a flow-through-cell after each purge volume. Purging will be considered complete when water quality parameters including pH, electrical conductivity, and temperature stabilize within 10 percent of the previous measurement and turbidity readings are less than 5 to 15 nephelometric turbidity units (NTU). Sample containers will be provided by the laboratory ready for sample collection.

When sampling residential wells with water taps, the taps will be opened and allowed to run for approximately 10 minutes to clear the system (including a pressure equalizing tank, if present) of residual water in the piping. Following the system purge, a sample will be collected from the tap for measurement of field parameters. The tap will be allowed to run for another three minutes before collecting another sample for the measurement of field parameters (pH, electrical conductivity, temperature). This procedure will be repeated until field parameters stabilized to within 10 percent of the previous measurements for three successive measurements. Following completion of "purging" procedures as described above, the groundwater sample will be collected directly from the tap. Sample containers will be provided by the laboratory ready for sample collection.



## ***Appendix B – Sampling and Analysis Plan***

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### **2.5 Sample Management**

**Containers.** Clean sample containers will be provided by the analytical laboratory ready for sample collection (the container requirements are listed in Table B-1).

**Labeling Requirements.** A sample label will be affixed to each sample container before sample collection. All containers will be marked with the project name, sample I.D. (unique I.D. for each sample location), date and time stamp (military time) of collection, sampler's initials, and the type of analysis.

**Sample Storage and Shipment.** Soil samples will be stored in a cooler chilled with ice or blue ice to 4 degrees Celsius (°C). The cooler lid will be sealed with chain-of-custody seals. If necessary, the samples will be sent via overnight courier to the analytical laboratory for chemical analysis. Otherwise, Ash Creek will transport the containers to the laboratory. Chain of custody will be maintained and documented at all times.

### **2.6 Decontamination Procedures**

**Personnel Decontamination.** Personnel decontamination procedures depend on the level of protection specified for a given activity. The HASP (Appendix A) identifies the appropriate level of protection for the type of work and expected field conditions associated with this project. In general, clothing and other protective equipment can be removed from the investigation area. Field personnel should thoroughly wash their hands and faces at the end of each day and before taking any work breaks.

**Sampling Equipment Decontamination.** To prevent cross-contamination between sampling events, clean, dedicated sampling equipment (e.g., groundwater sampling tubing) will be used for each sampling event and will be discarded after use. Cleaning of non-disposable items (i.e., field meter and water level probe) will consist of washing in a detergent (Alconox®) solution, rinsing with tap water, followed by a de-ionized (DI) water rinse. Decontamination water will be collected and handled in accordance with Section 2.9.

### **2.7 Handling of Investigation-Derived Waste**

IDW will consist of purge water and decontamination water. IDW will be temporarily placed in five-gallon buckets and covered with a lid. Throughout the sampling event, the buckets will be emptied into the facility drain located at the southeast corner of the site for treatment at the on-site stormwater treatment system (Figure 2 of Work Plan). At a minimum, buckets will be emptied into the drain by the end of each field day.

Disposable items, such as sample tubing, gloves, protective overalls (e.g., Tyvek®), paper towels, etc., will be placed in plastic bags after use and deposited in trash receptacles for disposal.



## **Appendix B – Sampling and Analysis Plan**

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### **3.0 Analytical Testing Program**

Analytical laboratory QA/QC procedures are discussed in Section 5 of this appendix.

Table B-2 lists the proposed analytical methods, detection limit goals, and lists the anticipated number of groundwater samples. Samples will be collected and handled using methods described in Section 2 of this appendix. Specific container and storage requirements for samples will be discussed with the analytical laboratory prior to sample collection and will be in accordance with the container requirements presented in Table B-2.

The contaminant of concern (COC) for this project is pentachlorophenol; groundwater samples will be analyzed for pentachlorophenol by EPA Method 8270 SIM.

### **4.0 Field Quality Assurance Program**

**Field Chain-of-Custody.** A chain-of-custody form will be used to record possession of a sample and to document analyses requested. Each time the sample bottles or samples are transferred between individuals, both the sender and receiver sign and date the chain-of-custody form. When a sample shipment is transported to the laboratory, a copy of the chain-of-custody form is included in the transport container (e.g., ice chest).

**Field Duplicate Samples.** Two field duplicate groundwater samples will be collected during each annual sampling event. Field duplicates will consist of two samples collected sequentially from one sample location to assess data variability. The field duplicates will be analyzed by the same analytical methods used for primary samples. Relative percent differences (RPDs) for field duplicates will be calculated to assess the data precision and accuracy and potential variability caused by sample handling.

**Trip Blank.** Trip blanks will not be necessary for this investigation as samples will not be analyzed for volatile constituents.

**Field Blanks and Equipment Rinse Blanks.** Field blanks and equipment rinse blanks are not necessary because the sample tubing is dedicated to each well.

### **5.0 Quality Assurance and Quality Control**

**Laboratory QA/QC.** The laboratory maintains an internal quality assurance program as documented in its laboratory quality assurance manual. The laboratory uses a combination of data quality indicators, including laboratory-specific detection limits, instrument calibration, calibration verification, blanks, surrogate recoveries, duplicates, matrix spike (MS) recoveries, matrix spike duplicate (MSD) recoveries, blank spike recoveries, and blank spike duplicate recoveries, to evaluate the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of



## ***Appendix B – Sampling and Analysis Plan***

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the test methods. QA/QC requirements are also detailed in the EPA Work Plan (EPA, 2010). Parameters for determining sensitivity, accuracy, and precision for pentachlorophenol are provided in the EPA Work Plan (Table 4, EPA, 2010).

**Field QA/QC.** Field duplicates and MS/MSD samples will be submitted to the laboratory as part of the field QA/QC program. The sample, sample duplicate, and the MS/MSD samples will be taken from the same sample location, if possible. A summary of QC samples are provided in Table B-3.

**Instrument Calibration.** Field instruments, including the water level probe and PID, will be calibrated daily prior to use. PID calibration procedures are summarized in SOP 2.1, provided in this appendix. Instruments will otherwise be calibrated in accordance with the manufacturer's specifications. Additional instructions for field equipment inspection, maintenance, and decontamination are provided in Section 3.0 of the EPA Work Plan (EPA, 2010).

### **6.0 Documentation**

During groundwater monitoring activities at the site, field activities will be documented in the field notebook or on field data sheets. The following information will be documented in the field notebook:

- Daily time of arrival and departure from site
- Project personnel on site
- Equipment calibration records
- Health and safety monitoring records
- Summary of equipment present and equipment used
- Documentation of site visitors, their associations, and purpose of visit

The following information will be recorded on the field data sheets:

- Instrument calibration data
- Water levels
- Purge volumes
- Field measurements
- Sampling information
- IDW volumes
- Shipping information



Table B-1 - Analytical Methods - Sample Container and Preservation Requirements  
 Former Taylor Lumber Project, DEQ Task Order No. 57-08-28  
 Sheridan, Oregon

Groundwater Analysis	Method	Container	Preservative	Storage Temperature	Holding Time
Pentachlorophenol	EPA 8270 SIM	(2) 1-L Amber Glass per Sample	N/A	4°C	7 days

**Notes:**

1. EPA = U.S. Environmental Protection Agency.
2. °C = Degrees Celsius.
3. L = Liter.
4. N/A = not applicable.
5. SIM = Low level analysis.

Table B-2 - Analytical Methods, Anticipated Sample Number, and Reporting Limit Goals  
Former Taylor Lumber Project, DEQ Task Order No. 57-08-28  
Sheridan, Oregon

Analyte	Analytical Method	Anticipated Number of Samples (per event)	Reporting Limit Goal (µg/L)
Pentalchlorophenol	EPA 8270 SIM*	21	1

*Notes:*

1. µg/L = Micrograms per liter.
2. EPA = U.S. Environmental Protection Agency.
3. Chain-of-Custody should denote analysis as "SV8270 Acid(PCP Low Level Only)"

Table B-3 - Summary of Quality Control Samples  
Former Taylor Lumber Project, DEQ Task Order No. 57-08-28  
Sheridan, Oregon

Parameter	Method	Field Duplicates	MS/MSD	Field Blanks	Equipment Blanks	Trip Blanks
Pentachlorophenol *	EPA 8270 SIM	2	1/1	0	0	0

**Notes:**

1. EPA = Environmental Protection Agency
2. MS/MSD = Matrix Spike/Matrix Spike Duplicate.
3. \* = Where possible, a sample, sample duplicate, and MS/MSD sample should be taken from the same location.
4. For MS/MSD samples, one 1-L Amber bottle is required. If sufficient volume is available, collect 2 1-L amber bottles to ensure against potential breakage.
5. For field duplicates, sample volume collected should be doubled (4-1 L Ambers per duplicate well).

## ***Appendix C***

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### **Oregon Laboratory Certification, Laboratory Analytical Report and Data Quality Review**

## ***Appendix C – Laboratory Analytical Report and Data Quality Review***

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This appendix documents the results of a quality assurance/quality control (QA/QC) review of the analytical data for samples collected in April 2011 for the Oregon Department of Environmental Quality (DEQ) Taylor Lumber and Treating Superfund site. Groundwater samples were analyzed by ESC Lab Sciences (ESC) of Mt Juliet, Tennessee. Copies of the analytical laboratory reports are included in this appendix.

The QA review included examination and validation of the laboratory summary reports, including:

- Analytical methods;
- Detection limits;
- Sample holding times;
- Surrogates, spikes, and blanks; and
- Sample replicates and other field quality assurance samples.

The QA review did not include a review of raw data.

### **1.0 Analytical Methods**

Groundwater samples were analyzed for pentachlorophenol (PCP) by EPA Method 8270 (Low Level, PCP only).

### **2.0 Quality Assurance Review**

The following criteria were evaluated in the standard data quality review process:

- Holding times;
- Method blanks;
- Surrogate recoveries;
- Laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recoveries;
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries; and
- Laboratory duplicate and relative percent difference (RPD).

Based on this review, data are considered to be of acceptable quality and are suitable for their intended purposes.

**Holding Times.** Samples were analyzed within the holding times specified.



## **Appendix C – Laboratory Analytical Report and Data Quality Review**

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**Method Blanks.** A method – or laboratory – blank is a sample prepared in the laboratory along with the actual samples and analyzed for the same parameters at the same time. It is used to assess if detected contaminants may be the result of contamination of the samples in the laboratory. PCP was not detected in the laboratory method blanks.

**Surrogate Recovery.** Surrogates are organic compounds that are similar in chemical composition to the analytes of interest and spiked into environmental and batch QC samples prior to sample preparation and analysis. Surrogate recoveries for environmental samples are used to evaluate matrix interference on a sample-specific basis. For the analysis, three surrogates were analyzed. Surrogate recoveries for two out of three analytes were below acceptance criteria in several samples; therefore, the lab flagged the data with a J2 qualifier. Per the method, the surrogates were reanalyzed and recoveries were again below the acceptance criteria, indicating a sample matrix effect. For sample MW-13S, there was not adequate sample volume to reanalyze the sample and therefore the surrogates were flagged with an L2 qualifier.

The laboratory stated that of the three surrogates analyzed, the compound most representative of PCP (the lightest surrogate) met acceptance criteria in the initial surrogate analysis and the re-analysis, indicating that PCP recovery was likely within acceptable criteria. Furthermore, the other analysis spike samples (LCS and MS) were within acceptance criteria, verifying the accuracy of the analysis.

The surrogate recovery limits for sample MW-25S could not be evaluated as the surrogates were diluted out as part of the sample dilution process. As stated above, the LCS and MS recoveries associated with this batch indicate that the accuracy of the analysis is acceptable.

**Laboratory Control Sample and Laboratory Control Sample Duplicate.** LCS/LCSD are analyzed by the laboratory to assess the accuracy of the analytical equipment. An LCS/LCSD sample is prepared from an analyte-free matrix that is then spiked with known levels of the constituents of interest (i.e., a standard). The concentrations are measured and the results are compared to the known spiked levels. This comparison is expressed as percent recovery. The RPD between the LCS and LCSD is calculated. The percent recovery for LCS and LCSD samples were within acceptable limits. The RPD between the LCS and LCSD were within the acceptance criteria.

**Matrix Spike and Matrix Spike Duplicate Analyses.** MS/MSD analysis involves two aliquots of an environmental sample that are spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. These analyses are used to assess the potential for matrix interference with recovery or detection of the constituents of interest and the accuracy of the determination. The RPD between the MS and MSD is calculated. An MS/MSD sample was collected from monitoring well MW-06S in accordance with the work plan, which indicated that the sample, sample duplicate, and MS/MSD samples all be collected from the same sample location. Percent recoveries of the MS/MSD analyses were within control limits for PCP. The RPD between the MS and MSD samples were within the acceptance criteria.



## ***Appendix C – Laboratory Analytical Report and Data Quality Review***

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**Field Duplicate.** A field duplicate is a second field sample collected from a selected sample location. Field duplicate samples serve as a check on laboratory quality as well as potential variability of the sample matrix. The field duplicate is analyzed and compared to the first sample to assess the precision of the analytical method. This comparison can be expressed by the RPD between the original and duplicate samples. The field duplicate samples were collected from well MW-6S and MW-16S. RPDs were below 10 percent and therefore within quality control limits.

**Reporting Limits.** Reporting limits, reported as reported detection limit (RDL) on the laboratory report, were not elevated in the project groundwater samples. PCP was detected in sample MW-11S at a concentration below the lowest calibration point for the analysis. The value is considered an estimate and is flagged in Table 1 with a "J" qualifier.

**Conclusion.** In conclusion, the QA objectives have been met, and the data are of sufficient quality for use in this project.





# OREGON

## Environmental Laboratory Accreditation Program



NELAP Recognized

Environmental Science Corporation  
TN200002

12065 Lebanon Road  
Mt. Juliet, TN 37122


IS GRANTED APPROVAL BY ORELAP UNDER THE 2003 NELAP STANDARDS, TO  
PERFORM ANALYSES ON ENVIRONMENTAL SAMPLES IN MATRICES AS LISTED  
BELOW :

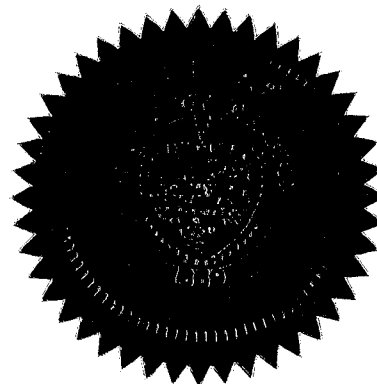
Air	Drinking Water	Non Potable Water	Solids and Chem. Waste	Tissue
Chemistry	Chemistry	Chemistry Toxicity Testing	Chemistry	

AND AS RECORDED IN THE LIST OF APPROVED ANALYTES, METHODS, ANALYTIC  
TECHNIQUES, AND FIELDS OF TESTING ISSUED CONCURRENTLY WITH THIS CERTIFICATE AND  
REVISED AS NECESSARY.

ACCREDITED STATUS DEPENDS ON SUCCESSFUL ONGOING PARTICIPATION IN THE  
PROGRAM AND CONTINUED COMPLIANCE WITH THE STANDARDS.

CUSTOMERS ARE URGED TO VERIFY THE LABORATORY'S CURRENT ACCREDITATION STATUS

  
for Irene E. Ronning Ph.D.  
Oregon State Public Health Laboratory  
ORELAP Administrator  
3150 NW. 229th Ave, Suite 100  
Hillsboro, OR 97124



ISSUE DATE: 01/16/2011

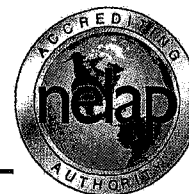
EXPIRATION DATE: 01/15/2012

Certificate No: TN200002 - 008



# Oregon

## Environmental Laboratory Accreditation Program



Department of Agriculture, Laboratory Division  
Department of Environmental Quality, Laboratory Division  
Department of Human Services, Public Health Laboratory

NELAP Recognized

### ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

### Environmental Science Corporation

12065 Lebanon Road  
Mt. Juliet TN 37122

Issue Date: 01/16/2011 Expiration Date: 01/15/2012

As of 01/16/2011 this list supercedes all previous lists for this certificate number.  
Customers. Please verify the current accreditation standing with ORELAP.

#### MATRIX : Air

Reference	Code	Description
EPA 3C	694	Fixed Gasses by GC/TCD
<b>Analyte Code</b>	<b>Analyte</b>	
3780	Carbon monoxide	
4926	Methane	
1843	Nitrogen	
3895	Oxygen	
EPA TO-15	10248803	VOCs collected in Canisters by GC/MS
<b>Analyte Code</b>	<b>Analyte</b>	
5160	1,1,1-Trichloroethane	
5110	1,1,2,2-Tetrachloroethane	
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	
5165	1,1,2-Trichloroethane	
4630	1,1-Dichloroethane	
4640	1,1-Dichloroethylene	
5155	1,2,4-Trichlorobenzene	
5210	1,2,4-Trimethylbenzene	
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)	
4695	1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon-114)	
4610	1,2-Dichlorobenzene	
4635	1,2-Dichloroethane (Ethylene dichloride)	
4655	1,2-Dichloropropane	
5215	1,3,5-Trimethylbenzene	
9318	1,3-Butadiene	
4615	1,3-Dichlorobenzene	
4620	1,4-Dichlorobenzene	
4735	1,4-Dioxane (1,4- Diethyleneoxide)	
4836	1-Propene	
5220	2,2,4-Trimethylpentane	
4410	2-Butanone (Methyl ethyl ketone, MEK)	
4535	2-Chlorotoluene	
4860	2-Hexanone	
4542	4-Ethyltoluene	
4995	4-Methyl-2-pentanone (MIBK)	
4300	Acetaldehyde	
4315	Acetone	
4320	Acetonitrile	
4355	Allyl chloride (3-Chloropropene)	
4375	Benzene	
5635	Benzyl chloride	

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### MATRIX : Drinking Water

Reference	Code	Description
EPA 150.1	10008409	pH - Electrometric Measurement
<b>Analyte Code</b>	<b>Analyte</b>	
1900	pH	
EPA 180.1 2	10011800	Turbidity - Nephelometric
<b>Analyte Code</b>	<b>Analyte</b>	
2055	Turbidity	
EPA 200.7 5	10014003	ICP- metals
<b>Analyte Code</b>	<b>Analyte</b>	
1000	Aluminum	
1015	Barium	
1020	Beryllium	
1030	Cadmium	
1035	Calcium	
1040	Chromium	
1055	Copper	
1760	Hardness (calc)	
1070	Iron	
1085	Magnesium	
1090	Manganese	
1105	Nickel	
1150	Silver	
1155	Sodium	
1190	Zinc	
EPA 200.8 5.5	10014809	Metals by ICP-MS
<b>Analyte Code</b>	<b>Analyte</b>	
1005	Antimony	
1010	Arsenic	
1015	Barium	
1020	Beryllium	
1030	Cadmium	
1040	Chromium	
1055	Copper	
1075	Lead	
1090	Manganese	
1105	Nickel	
1140	Selenium	
1150	Silver	
1165	Thallium	
1190	Zinc	
EPA 245.1 3	10036609	Mercury by Cold Vapor Atomic Absorption
<b>Analyte Code</b>	<b>Analyte</b>	
1095	Mercury	
EPA 300.0	10053006	Ion chromatography - anions.
<b>Analyte Code</b>	<b>Analyte</b>	
1540	Bromide	
1570	Chlorate	
1575	Chloride	

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Analyte Code	Analyte
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7120	gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)
7685	Heptachlor
7690	Heptachlor epoxide
6275	Hexachlorobenzene
6285	Hexachlorocyclopentadiene
7810	Methoxychlor
8045	Propachlor (Ramrod)
8250	Toxaphene (Chlorinated camphene)
8295	Trifluralin (Trellan)

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EPA 515.1 4	10087408	Chlorinated acids Liquid/Liquid and GC/ECD
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Analyte Code	Analyte
8655	2,4,5-TP
8545	2,4-D
8560	2,4-DB
8555	Dalapon
8595	Dicamba
8605	Dichloroprop (Dichloroprop)
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
8650	Silvex (2,4,5-TP)

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EPA 524.2 4	10089006	Volatile Organic Compounds by purge and trap GC/MS
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Analyte Code	Analyte
5105	1,1,1,2-Tetrachloroethane

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EPA 524.2 4.1	10088809	Volatile Organic Compounds GC/MS Capillary Column
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Analyte Code	Analyte
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene
5180	1,2,3-Trichloropropane
5155	1,2,4-Trichlorobenzene
5210	1,2,4-Trimethylbenzene
4570	1,2-Dibromo-3-chloropropane (DBCP)
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)
4610	1,2-Dichlorobenzene
4635	1,2-Dichloroethane (Ethylene dichloride)
4655	1,2-Dichloropropane
6800	1,3,5-Trichlorobenzene
5215	1,3,5-Trimethylbenzene
4615	1,3-Dichlorobenzene
4660	1,3-Dichloropropane
4620	1,4-Dichlorobenzene
4665	2,2-Dichloropropane
4410	2-Butanone (Methyl ethyl ketone, MEK)
4535	2-Chlorotoluene
4860	2-Hexanone
4540	4-Chlorotoluene
4910	4-Isopropyltoluene (p-Cymene)

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Analyte Code	Analyte
2055	Turbidity
SM 2150 B 20th ED	20043407 Odor by Threshold Odor Test
Analyte Code	Analyte
1855	Odor
SM 2320 B 20th ED	20045209 Alkalinity by Titration
Analyte Code	Analyte
1505	Alkalinity as CaCO <sub>3</sub>
SM 2340 B 20th ED	20046202 Hardness by calculation
Analyte Code	Analyte
1750	Hardness
SM 2510 B 20th ED	20048208 Conductivity by Probe
Analyte Code	Analyte
1610	Conductivity
SM 2540 C 20th ED	20050004 Total Dissolved Solids
Analyte Code	Analyte
1955	Residue filterable (TDS)
SM 4110 B 20th ED	20076602 Anions by Ion Chromatography with Chemical Suppression of Eluent
Analyte Code	Analyte
1575	Chloride
1730	Fluoride
1810	Nitrate as N
1840	Nitrite as N
1870	Orthophosphate as P
2000	Sulfate
SM 4500-CI G 20th ED	20081203 Residual Chlorine by DPD Colorimetric Determination
Analyte Code	Analyte
1940	Total residual chlorine
SM 4500-CN C 20th ED	20091605 Cyanide, Total After Distillation
Analyte Code	Analyte
1635	Cyanide
SM 4500-CN E 20th ED	20092404 Cyanide by Colorimetric Determination
Analyte Code	Analyte
1635	Cyanide
1645	Total cyanide
SM 4500-CN G 20th ED	20093203 Cyanide Amenable to Chlorination after Distillation
Analyte Code	Analyte
1510	Amenable cyanide

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#### MATRIX: Non-Potable Water

Reference	Code	Description
ASTM D1067-92	30003806	Acidity or Alkalinity of Water
<b>Analyte Code</b>	<b>Analyte</b>	
1500	Acidity, as CaCO <sub>3</sub>	
EPA 1000	10114600	Fathead Minnow Larval Survival and Growth, chronic (EPA 821/R-02/013)
<b>Analyte Code</b>	<b>Analyte</b>	
3450	Tox, chronic, fw organism	
EPA 1002	10115001	Daphnid Survival and Reproduction, chronic (EPA 821/R-02/013)
<b>Analyte Code</b>	<b>Analyte</b>	
3450	Tox, chronic, fw organism	
EPA 1010	10116606	Pensky-Martens Closed-Cup Method for Determining Ignitability
<b>Analyte Code</b>	<b>Analyte</b>	
1780	Ignitability	
EPA 1010A	10234807	Pensky-Martens Closed-Cup Method for Determining Ignitability
<b>Analyte Code</b>	<b>Analyte</b>	
1780	Ignitability	
EPA 1110	10118000	Corrosivity Toward Steel
<b>Analyte Code</b>	<b>Analyte</b>	
1615	Corrosivity	
EPA 1110A	10235208	Corrosivity Toward Steel
<b>Analyte Code</b>	<b>Analyte</b>	
1615	Corrosivity	
EPA 120.1	10006403	Conductance - Specific @ 25 C
<b>Analyte Code</b>	<b>Analyte</b>	
1610	Conductivity	
EPA 130.1	10006801	Hardness - Colorimetric, Automated EDTA
<b>Analyte Code</b>	<b>Analyte</b>	
1750	Hardness	
EPA 1311	10118806	Toxicity Characteristic Leaching Procedure
<b>Analyte Code</b>	<b>Analyte</b>	
308	Extraction/Preparation	
EPA 1312	10119003	Synthetic Precipitation Leaching Procedure
<b>Analyte Code</b>	<b>Analyte</b>	
308	Extraction/Preparation	

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Analyte Code	Analyte
1075	Lead
1085	Magnesium
1090	Manganese
1100	Molybdenum
1105	Nickel
1125	Potassium
1140	Selenium
1150	Silver
1155	Sodium
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

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EPA 200.8 5.5	10014809	Metals by ICP-MS
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Analyte Code	Analyte
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1030	Cadmium
1040	Chromium
1055	Copper
1075	Lead
1090	Manganese
1100	Molybdenum
1105	Nickel
1140	Selenium
1150	Silver
1165	Thallium
1175	Tin
1180	Titanium
1185	Vanadium
1190	Zinc

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EPA 2000 Fathead minnow Acute	10264809	Fathead Minnow, acute
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Analyte Code	Analyte
3455	Toxicity, acute, fw organism

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EPA 2002 Ceriodaphnia dubia Acute	10214605	Ceriodaphnia dubia, acute
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Analyte Code	Analyte
3440	Tox, acute, estu & marine organism

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EPA 218.6	10268403	Dissolved Hexavalent Chromium by Ion Chromatography
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Analyte Code	Analyte
1045	Chromium VI

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EPA 245.1 3	10036609	Mercury by Cold Vapor Atomic Absorption
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Analyte Code	Analyte
1095	Mercury

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EPA 300.0 2.1	10053200	Methods for the Determination of Inorganic Substances in Environmental Samples
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Analyte Code	Analyte
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EPA 3520C	10139001	Continuous Liquid-liquid extraction
<b>Analyte Code</b>	<b>Analyte</b>	
308	Extraction/Preparation	
EPA 353.2 2	10067604	Nitrate/Nitrite Nitrogen - Automated, Cadmium
<b>Analyte Code</b>	<b>Analyte</b>	
1820	Nitrate-nitrite	
6484	Nitrocellulose	
EPA 376.1	10074201	Sulfide - Titrimetric, Iodine.
<b>Analyte Code</b>	<b>Analyte</b>	
2005	Sulfide	
EPA 410.4 2	10077404	Chemical Oxygen Demand - Colorimetric, Automated.
<b>Analyte Code</b>	<b>Analyte</b>	
1565	Chemical oxygen demand	
EPA 420.1	10079400	Phenolics - Spectrophotometric, manual.
<b>Analyte Code</b>	<b>Analyte</b>	
1905	Total phenolics	
EPA 420.4	10080203	Phenolics - Total Recoverable by Semi-Automated Colorimetry
<b>Analyte Code</b>	<b>Analyte</b>	
1905	Total phenolics	
EPA 5030B	10153409	Purge and trap for aqueous samples
<b>Analyte Code</b>	<b>Analyte</b>	
308	Extraction/Preparation	
EPA 5030C	10284603	Purge-and-Trap for Aqueous Samples
<b>Analyte Code</b>	<b>Analyte</b>	
308	Extraction/Preparation	
EPA 6010B	10155609	ICP - AES
<b>Analyte Code</b>	<b>Analyte</b>	
1000	Aluminum	
1005	Antimony	
1010	Arsenic	
1015	Barium	
1020	Beryllium	
1025	Boron	
1030	Cadmium	
1035	Calcium	
1040	Chromium	
1050	Cobalt	
1055	Copper	
1070	Iron	
1075	Lead	
1080	Lithium	
1085	Magnesium	
1090	Manganese	
1100	Molybdenum	

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Analyte Code	Analyte
1020	Beryllium
1030	Cadmium
1040	Chromium
1055	Copper
1075	Lead
1090	Manganese
1100	Molybdenum
1105	Nickel
1140	Selenium
1150	Silver
1165	Thallium
1175	Tin
1185	Vanadium
1190	Zinc

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EPA 6020A 10156408 Inductively Coupled Plasma-Mass Spectrometry

Analyte Code	Analyte
1005	Antimony
1010	Arsenic
1015	Barium
1020	Beryllium
1030	Cadmium
1040	Chromium
1055	Copper
1075	Lead
1090	Manganese
1100	Molybdenum
1105	Nickel
1140	Selenium
1150	Silver
1165	Thallium
1175	Tin
1185	Vanadium
1190	Zinc

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EPA 608 10103603 Organochlorine Pesticides & PCBs by GC/ECD

Analyte Code	Analyte
7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)
7240	alpha-Chlordane
8880	Aroclor-1016 (PCB-1016)
8885	Aroclor-1221 (PCB-1221)
8890	Aroclor-1232 (PCB-1232)
8895	Aroclor-1242 (PCB-1242)
8900	Aroclor-1248 (PCB-1248)
8905	Aroclor-1254 (PCB-1254)
8910	Aroclor-1260 (PCB-1260)
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7265	Chloroneb
7310	Chlorthalonil (Daconil)
7105	delta-BHC
7470	Dieldrin
7510	Endosulfan I
7515	Endosulfan II
7520	Endosulfan sulfate

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Analyte Code	Analyte
8245	Tokuthion (Prothiophos)

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EPA 624	10107207	Volatile Organic Compounds by purge and trap GC/MS
Analyte Code	Analyte	
5105	1,1,1,2-Tetrachloroethane	
5160	1,1,1-Trichloroethane	
5110	1,1,2,2-Tetrachloroethane	
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	
5165	1,1,2-Trichloroethane	
4630	1,1-Dichloroethane	
4640	1,1-Dichloroethylene	
4670	1,1-Dichloropropene	
5150	1,2,3-Trichlorobenzene	
5180	1,2,3-Trichloropropane	
5182	1,2,3-Trimethylbenzene	
5155	1,2,4-Trichlorobenzene	
5210	1,2,4-Trimethylbenzene	
4570	1,2-Dibromo-3-chloropropane (DBCP)	
4585	1,2-Dibromoethane (EDB, Ethylene dibromide)	
4610	1,2-Dichlorobenzene	
4635	1,2-Dichloroethane (Ethylene dichloride)	
4655	1,2-Dichloropropane	
5215	1,3,5-Trimethylbenzene	
4615	1,3-Dichlorobenzene	
4660	1,3-Dichloropropane	
4620	1,4-Dichlorobenzene	
4735	1,4-Dioxane (1,4-Diethyleneoxide)	
4665	2,2-Dichloropropane	
4410	2-Butanone (Methyl ethyl ketone, MEK)	
4500	2-Chloroethyl vinyl ether	
4535	2-Chlorotoluene	
4860	2-Hexanone	
5020	2-Nitropropane	
4540	4-Chlorotoluene	
4910	4-Isopropyltoluene (p-Cymene)	
4995	4-Methyl-2-pentanone (MIBK)	
4315	Acetone	
4320	Acetonitrile	
4325	Acrolein (Propenal)	
4340	Acrylonitrile	
4355	Allyl chloride (3-Chloropropene)	
4375	Benzene	
4385	Bromobenzene	
4390	Bromochloromethane	
4395	Bromodichloromethane	
4397	Bromoethane (Ethyl Bromide)	
4400	Bromoform	
4450	Carbon disulfide	
4455	Carbon tetrachloride	
4475	Chlorobenzene	
4575	Chlorodibromomethane	
4485	Chloroethane (Ethyl chloride)	
4505	Chloroform	
4525	Chloroprene (2-Chloro-1,3-butadiene)	
4645	cis-1,2-Dichloroethylene	
4680	cis-1,3-Dichloropropene	
4600	cis-1,4-Dichloro-2-butene	
4555	Cyclohexane	
4560	Cyclohexanone	
4595	Dibromomethane (Methylene bromide)	

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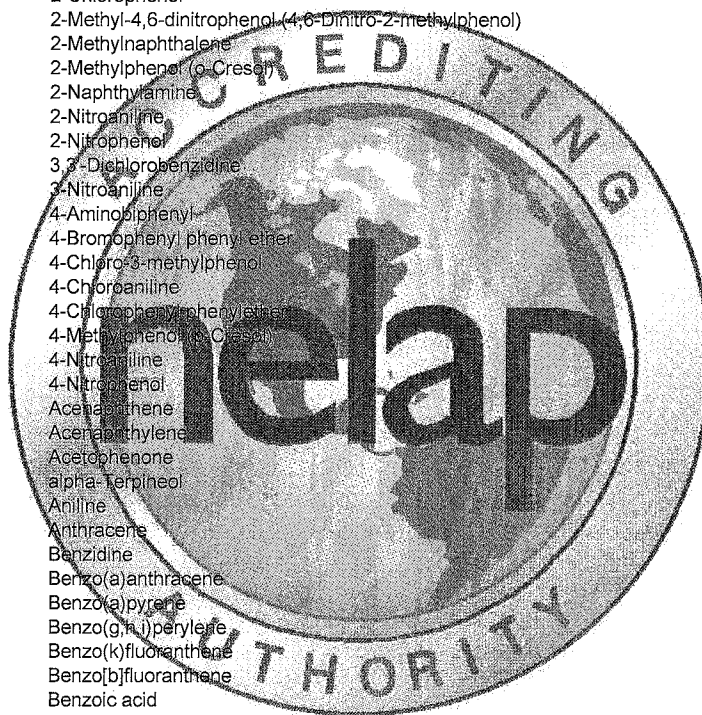
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Analyte Code	Analyte
6835	2,4,5-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol
6175	2,4-Dinitrophenol
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
5795	2-Chloronaphthalene
5800	2-Chlorophenol
6360	2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)
6385	2-Methylnaphthalene
6400	2-Methylphenol (o-Cresol)
6430	2-Naphthylamine
6460	2-Nitroaniline
6490	2-Nitrophenol
5945	3,3-Dichlorobenzidine
6465	3-Nitroaniline
5540	4-Aminobiphenyl
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenyl ether
6410	4-Methylphenol (p-Cresol)
6470	4-Nitroaniline
6500	4-Nitrophenol
5500	Acenaphthene
5505	Acenaphthylene
5510	Acetophenone
6700	alpha-Terpineol
5545	Aniline
5555	Anthracene
5595	Benidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5610	Benzoic acid
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
5670	Butyl benzyl phthalate
5680	Carbazole
5855	Chrysene
6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
5895	Dibenz(a,h) anthracene
5905	Dibenzofuran
6070	Diethyl phthalate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6290	Hexachlorophene
6295	Hexachloropropene
6315	Indeno(1,2,3-cd) pyrene



## ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

### Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

TN 37122

Issue Date: 01/16/2011

Expiration Date: 01/15/2012

As of 01/16/2011

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Customers. Please verify the current accreditation standing with ORELAP.

EPA 8021B

10174808

Aromatic and Halogenated Volatiles by GC with  
PID and/or ECD Purge & Trap

Analyte Code	Analyte
4375	Benzene
4765	Ethylbenzene
5000	Methyl tert-butyl ether (MTBE)
5245	m-Xylene
5250	o-Xylene
5255	p-Xylene
5140	Toluene
5260	Xylene (total)

EPA 8081A

10178606

Organochlorine Pesticides by GC/ECD

Analyte Code	Analyte
7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7005	Alachlor
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)
7240	alpha-Chlordane
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7265	Chlorobenz
7310	Chlorthalonil (Daconil)
7105	delta-BHC
7470	Dieldrin
7510	Endosulfan I
7515	Endosulfan II
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7575	Etridiazole
7120	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)
7245	gamma-Chlordane
7685	Heptachlor
7690	Heptachlor epoxide
6275	Hexachlorobenzene
6285	Hexachlorocyclopentadiene
7810	Methoxychlor
7975	Permethrin (total)
8045	Propachlor (Ramrod)
8250	Toxaphene (Chlorinated camphene)
8295	Trifluralin (Treflan)

EPA 8081B

10178800

Organochlorine Pesticides by GC/ECD

Analyte Code	Analyte
7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7005	Alachlor
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)
7240	alpha-Chlordane
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7265	Chlorobenz
7310	Chlorthalonil (Daconil)

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Analyte Code	Analyte
7770	Malathion
7785	Merphos
7825	Methyl parathion (Parathion, methyl)
7850	Mevinphos
7905	Naled
7985	Phorate
8110	Ronnel
8155	Sulfotepp
8200	Tetrachlorvinphos (Stirophos, Gardona) Z-isomer
8210	Tetraethyl pyrophosphate (TEPP)
8245	Tokuthion (Prothiophos)
8275	Trichloronate

EPA 8141B

10182204

Organophosphorous Pesticides by GC/NPD

Analyte Code	Analyte
7075	Azinphos methyl (Guthion)
7125	Bolstar (Sulprofos)
7300	Chlorpyrifos
7315	Coumaphos
7395	Demeton-o
7385	Demeton-s
7410	Diazinon
8610	Dichlorvos (DDVP, Dieldorvos)
7475	Dimethoate
8625	Disulfoton
7550	EPN
7570	Ethionop
7600	Fensulfothion
7605	Fenthion
7770	Malathion
7785	Merphos
7825	Methyl parathion (Parathion, methyl)
7850	Mevinphos
7905	Naled
7985	Phorate
8110	Ronnel
8155	Sulfotepp
8200	Tetrachlorvinphos (Stirophos, Gardona) Z-isomer
8210	Tetraethyl pyrophosphate (TEPP)
8245	Tokuthion (Prothiophos)
8275	Trichloronate

EPA 8151A

10183207

Chlorinated Herbicides by GC/ECD

Analyte Code	Analyte
8655	2,4,5-T
8545	2,4-D
8560	2,4-DB
8555	Dalapon
8595	Dicamba
8605	Dichloroprop (Dichlorprop)
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
7775	MCPA
7780	MCPP
8650	Silvex (2,4,5-TP)

EPA 8260B

10184802

Volatile Organic Compounds by purge and trap  
GC/MS

Analyte Code	Analyte
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Analyte Code	Analyte
4750	Ethanol
4755	Ethyl acetate
4810	Ethyl methacrylate
4765	Ethylbenzene
4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)
4835	Hexachlorobutadiene
4840	Hexachloroethane
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
4925	Methacrylonitrile
4940	Methyl acetate
4945	Methyl acrylate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4965	Methylcyclohexane
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
5005	Napthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4435	n-Butylbenzene
5025	n-Nitrosod-n-butylamine
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
5255	p-Xylene
4440	sec-Butylbenzene
5100	Styrene
4370	T-arylmethylether (TAME)
303	tert-aryl alcohol
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
304	tert-butyl-formate
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

EPA 8260C

10307003

Volatile Organics: GC/MS (capillary column)

Analyte Code	Analyte
5105	1,1,1,2-Tetrachloroethane
5160	1,1,1-Trichloroethane
5110	1,1,2,2-Tetrachloroethane
5195	1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)
5165	1,1,2-Trichloroethane
4630	1,1-Dichloroethane
4640	1,1-Dichloroethylene
4670	1,1-Dichloropropene
5150	1,2,3-Trichlorobenzene

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EPA CODE: TN00003

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Analyte Code	Analyte
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
4925	Methacrylonitrile
4940	Methyl acetate
4945	Methyl acrylate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4965	Methylcyclohexane
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4435	n-Butylbenzene
5015	Nitrobenzene
5025	n-Nitroso-d-n-butylamine
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
5255	p-Xylene
6685	Safrole
4440	sec-Butylbenzene
5100	Styrene
4370	T-amy methylether (TAME)
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)

EPA 8270C

10185805

Semivolatile Organic compounds by GC/MS

Analyte Code	Analyte
6705	1,2,3,4-Tetrachlorobenzene
6710	1,2,3,5-Tetrachlorobenzene
6715	1,2,4,5-Tetrachlorobenzene
5155	1,2,4-Trichlorobenzene
4610	1,2-Dichlorobenzene
6221	1,2-Diphenylhydrazine
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
4615	1,3-Dichlorobenzene
6160	1,3-Dinitrobenzene (1,3-DNB)
4620	1,4-Dichlorobenzene
6420	1,4-Naphthoquinone
5790	1-Chloronaphthalene
6425	1-Naphthylamine
6735	2,3,4,6-Tetrachlorophenol
6835	2,4,5-Trichlorophenol
6840	2,4,6-Trichlorophenol
6000	2,4-Dichlorophenol
6130	2,4-Dimethylphenol

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EPA CODE: TN00003

Certificate: TN200002 - 008

## Environmental Science Corporation

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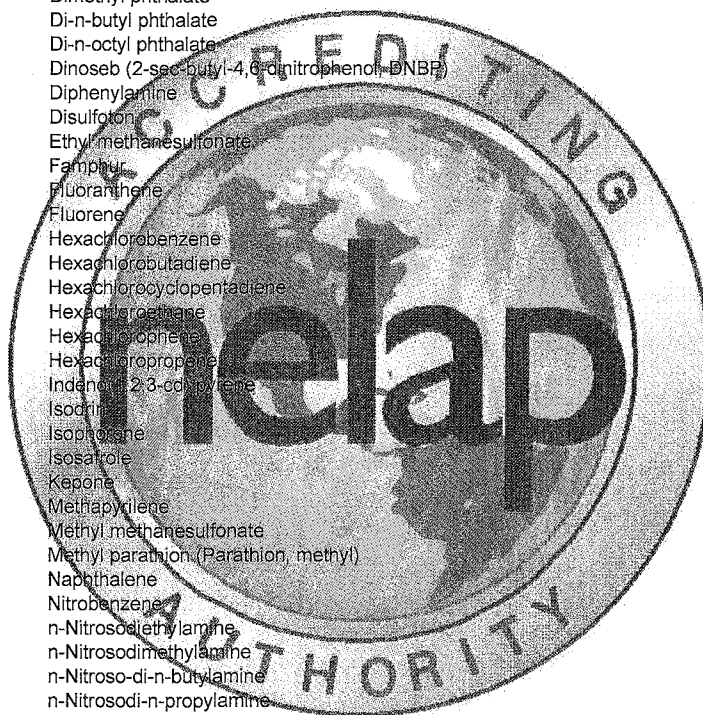
Expiration Date: 01/15/2012

As of 01/16/2011

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*Customers. Please verify the current accreditation standing with ORELAP.*

Analyte Code	Analyte
5900	Dibenz(a, j) acridine
5895	Dibenz(a, h) anthracene
9348	Dibenzo(a, h) pyrene
9351	Dibenzo(a, i) pyrene
5890	Dibenzo(a, e) pyrene
5905	Dibenzofuran
6070	Diethyl phthalate
7475	Dimethoate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
6205	Diphenylamine
8625	Disulfoton
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6290	Hexachlorophene
6295	Hexachloropropene
6315	Indeno(1,2,3-cd)pyrene
7725	Isodrin
6320	Isopropene
6325	Isosafrole
7740	Kepone
6345	Methapyrene
6375	Methyl methanesulfonate
7825	Methyl parathion (Parathion, methyl)
5005	Naphthalene
5015	Nitrobenzene
6525	n-Nitrosodimethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-di-n-butylamine
6545	n-Nitrosodi-n-propylamine
6535	n-Nitrosodiphenylamine
6550	n-Nitrosomethylethylamine
6555	n-Nitrosomorpholine
6560	n-Nitrosopiperidine
6565	n-Nitrosopyrrolidine
8290	o,o,o-Triethyl phosphorothioate
6590	Pentachlorobenzene
5035	Pentachloroethane
6600	Pentachloronitrobenzene
6605	Pentachlorophenol
6610	Phenacetin
6615	Phenanthrene
6625	Phenol
7985	Phorate
9663	p-Phenylenediamine
6650	Pronamide (Kerb)
6665	Pyrene
5095	Pyridine
6685	Safrole
8155	Sulfotepp
8235	Thionazin (Zinophos)



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Certificate: TN200002 - 008

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Issue Date: 01/16/2011

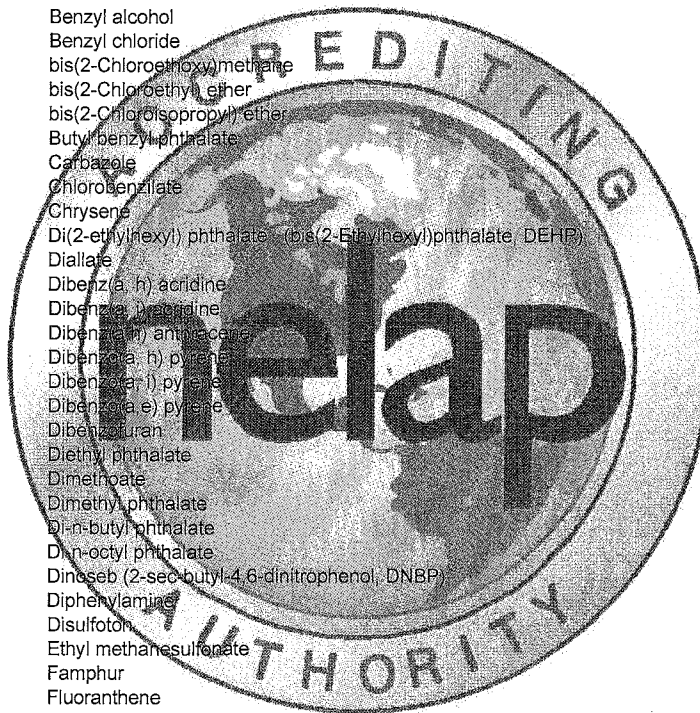
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Analyte Code	Analyte
5595	Benzidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
9309	Benzo(j)fluoranthene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5610	Benzoic acid
5625	Benzotrichloride
5630	Benzyl alcohol
5635	Benzyl chloride
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
5670	Butyl benzyl phthalate
5680	Carbazole
7260	Chlorobenzilate
5855	Chrysene
6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
7405	Diallyl ether
9354	Dibenz(a,h)acridine
5900	Dibenz(a,h)acridine
5895	Dibenz(a,h)anthracene
9348	Dibenz(a,h)pyrene
9351	Dibenz(a,i)pyrene
5890	Dibenz(a,e)pyrene
5905	Dibenzofuran
6070	Diethyl phthalate
7475	Dimethoate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
6205	Diphenylamine
8625	Disulfoton
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6290	Hexachlorophene
6295	Hexachloropropene
6315	Indeno(1,2,3-cd) pyrene
7725	Isodrin
6320	Isophorone
6325	Isosafrole
7740	Kepone
6345	Methapyrilene
6375	Methyl methanesulfonate
7825	Methyl parathion (Parathion, methyl)
5005	Naphthalene
5875	n-Decane
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-di-n-butylamine
6545	n-Nitrosodi-n-propylamine
6535	n-Nitrosodiphenylamine



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Analyte Code	Analyte
9432	RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)
EPA 8330A	10190008 Nitroaromatics and Nitramines by High Performance Liquid Chromatography (HPLC)
Analyte Code	Analyte
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
6160	1,3-Dinitrobenzene (1,3-DNB)
9651	2,4,6-Trinitrotoluene (2,4,6-TNT)
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
9303	2-Amino-4,6-dinitrotoluene (2-am-dnt)
9507	2-Nitrotoluene
9510	3-Nitrotoluene
9306	4-Amino-2,6-dinitrotoluene (4-am-dnt)
9513	4-Nitrotoluene
6415	Methyl-2,4,6-trinitrophenylnitramine (tetryl)
5015	Nitrobenzene
6485	Nitroglycerin
9522	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
9558	Pentaerythritoltetranitrate
9432	RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)
EPA 9010B	10193007 Total and Amenable Cyanide by Distillation and UV-Vis
Analyte Code	Analyte
1510	Amenable cyanide
1645	Total cyanide
EPA 9010C	10243002 Total and Amenable Cyanide by Distillation and UV-Vis
Analyte Code	Analyte
1510	Amenable cyanide
1645	Total cyanide
EPA 9012A	10193405 Total and Amenable Cyanide (automated colorimetric with off-line distillation)
Analyte Code	Analyte
1645	Total cyanide
EPA 9012B	10243206 Total and Amenable Cyanide (automated colorimetric with off-line distillation)
Analyte Code	Analyte
1645	Total cyanide
EPA 9020B	10194408 Total Organic Halides
Analyte Code	Analyte
2045	Total organic halides (TOX)
EPA 9030B	10195605 Acid-Soluble and Acid-Insoluble sulfides: Distillation
Analyte Code	Analyte
2005	Sulfide
EPA 9034	10196006 Titrimetric Procedure for Acid-Soluble and Acid-Insoluble Sulfides
Analyte Code	Analyte
2005	Sulfide

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NWTPH-Gx	90018603	Oregon DEQ TPH Gasoline Range Organics by GC/FID-PID Purge & Trap
<b>Analyte Code</b>	<b>Analyte</b>	
9408	Gasoline range organics (GRO)	
NWTPH-HCID	90013200	Oregon DEQ Total Petroleum Hydrocarbon ID
<b>Analyte Code</b>	<b>Analyte</b>	
2050	Total Petroleum Hydrocarbons (TPH)	
OA-1	90013802	Iowa TPH Gx by GC/PID Purge & Trap
<b>Analyte Code</b>	<b>Analyte</b>	
9408	Gasoline range organics (GRO)	
OA-2	90014009	Iowa TPH Dx
<b>Analyte Code</b>	<b>Analyte</b>	
9369	Diesel range organics (DRO)	
SM 2120 B 20th ED	20224004	Color by Visual Comparison
<b>Analyte Code</b>	<b>Analyte</b>	
1605	Color	
SM 2130 B 20th ED	20042404	Turbidity by Nephelometric Determination
<b>Analyte Code</b>	<b>Analyte</b>	
2055	Turbidity	
SM 2310 B 20th ED	20044206	Acidity by Titration
<b>Analyte Code</b>	<b>Analyte</b>	
1500	Acidity as CaCO <sub>3</sub>	
SM 2320 B 20th ED	20045209	Alkalinity by Titration
<b>Analyte Code</b>	<b>Analyte</b>	
1505	Alkalinity as CaCO <sub>3</sub>	
SM 2340 B 20th ED	20046202	Hardness by calculation
<b>Analyte Code</b>	<b>Analyte</b>	
1750	Hardness	
SM 2510 B 20th ED	20048208	Conductivity by Probe
<b>Analyte Code</b>	<b>Analyte</b>	
1610	Conductivity	
SM 2540 B 20th ED	20049007	Total Solids
<b>Analyte Code</b>	<b>Analyte</b>	
1950	Residue-total	
SM 2540 C 20th ED	20050004	Total Dissolved Solids
<b>Analyte Code</b>	<b>Analyte</b>	
1955	Residue-filterable (TDS)	

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SM 4500-NH3 G 20th ED	20111006	Ammonia by Automated Phenate
<b>Analyte Code</b>	<b>Analyte</b>	
1515	Ammonia as N	
SM 4500-NO3 <sup>-</sup> F 20th ED	20116205	Nitrate Nitrogen by Automated Cadmium Reduction Method
<b>Analyte Code</b>	<b>Analyte</b>	
1820	Nitrate-nitrite	
SM 4500-Norg C 20th ED	20119602	Nitrogen (Organic) by Semi-micro Kjeldahl Method
<b>Analyte Code</b>	<b>Analyte</b>	
1790	Kjeldahl nitrogen	
1795	Kjeldahl nitrogen - total	
SM 4500-O C 19th ED	20120201	Dissolved Oxygen by Azide Modification
<b>Analyte Code</b>	<b>Analyte</b>	
1880	Oxygen, dissolved	
SM 4500-O G 20th ED	20121204	Dissolved Oxygen by Membrane Electrode Method
<b>Analyte Code</b>	<b>Analyte</b>	
1880	Oxygen, dissolved	
SM 4500-P B 5 20th ED	20123200	Phosphorus by Persulfate Digestion Method
<b>Analyte Code</b>	<b>Analyte</b>	
1910	Phosphorus, total	
SM 4500-P E 20th ED	20123802	Phosphorus by Ascorbic Acid Reduction
<b>Analyte Code</b>	<b>Analyte</b>	
1870	Orthophosphate as P	
1910	Phosphorus, total	
SM 4500-S2 <sup>-</sup> D 20th ED	20125400	Sulfide by Methylene Blue Method
<b>Analyte Code</b>	<b>Analyte</b>	
2005	Sulfide	
SM 4500-SO3 <sup>-</sup> B 20th ED	20130205	Sulfite by Iodometric Method
<b>Analyte Code</b>	<b>Analyte</b>	
2015	Sulfite-SO3	
SM 5210 B 20th ED	20134809	Biochemical Oxygen Demand, 5-Day (BOD5)
<b>Analyte Code</b>	<b>Analyte</b>	
1530	Biochemical oxygen demand	
1555	Carbonaceous BOD, CBOD	
SM 5220 D 20th ED	20136407	Chemical Oxygen Demand by Closed Reflux and Colorimetric Determination
<b>Analyte Code</b>	<b>Analyte</b>	
1565	Chemical oxygen demand	

# ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

## Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

TN 37122

Issue Date: 01/16/2011

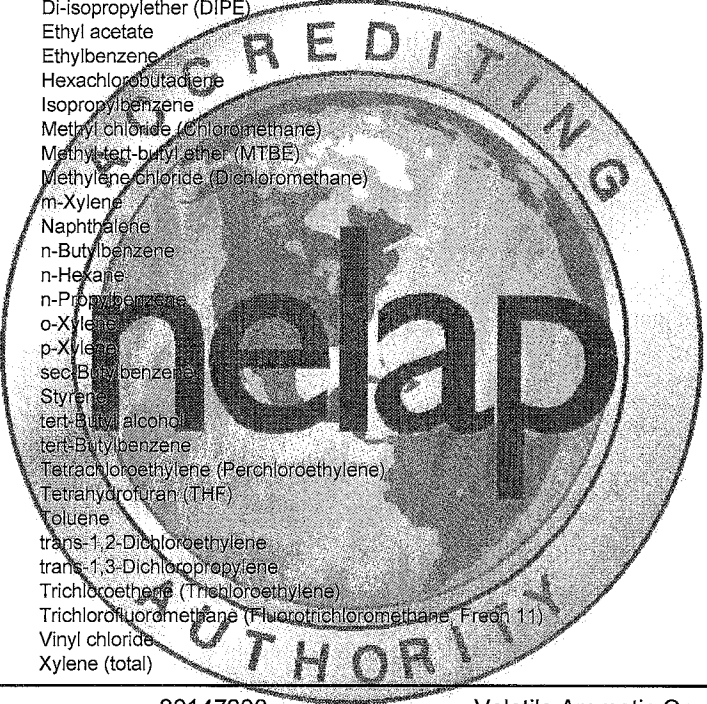
Expiration Date: 01/15/2012

As of 01/16/2011

this list supercedes all previous lists for this certificate number.

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Analyte Code	Analyte
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4625	Dichlorodifluoromethane (Freon-12)
9375	Di-isopropylether (DIPE)
4755	Ethyl acetate
4765	Ethylbenzene
4835	Hexachlorobutadiene
4900	Isopropylbenzene
4960	Methyl chloride (Chloromethane)
5000	Methyl tert-butyl ether (MTBE)
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
5005	Naphthalene
4435	n-Butylbenzene
4855	n-Hexane
5090	n-Propylbenzene
5250	o-Xylene
5255	p-Xylene
4440	sec-Butylbenzene
5100	Styrene
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5235	Vinyl chloride
5260	Xylene (total)



The logo is circular with a globe in the background. The word "NELAP" is prominently displayed in the center. Around the globe, the words "ACCREDITING" and "AUTHORITY" are written in a circular path. The logo is semi-transparent, allowing the table content to be seen through it.

SM 6200 C 20th ED	20147200	Volatile Aromatic Organic Compounds by GC/PID Purge & Trap
Analyte Code	Analyte	
4375	Benzene	
4765	Ethylbenzene	
5000	Methyl tert-butyl ether (MTBE)	
4420	tert-Butyl alcohol	
5140	Toluene	
5260	Xylene (total)	

SM 6630 B 20th ED	20153008	Organochlorine Pesticides by Liquid/Liquid Extraction and GC/ECD
Analyte Code	Analyte	
8295	Trifluralin (Treflan)	

SM 6630 C 20th ED	20153804	Organochlorine Pesticides and PCBs by Liquid/Liquid Extraction and GC/ECD
Analyte Code	Analyte	
7355	4,4'-DDD	
7360	4,4'-DDE	
7365	4,4'-DDT	
7025	Aldrin	

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#### MATRIX : Solids

Reference	Code	Description
EPA 1010	10116606	Pensky-Martens Closed-Cup Method for Determining Ignitability
<b>Analyte Code</b> 1780	<b>Analyte</b> Ignitability	
EPA 1010A	10234807	Pensky-Martens Closed-Cup Method for Determining Ignitability
<b>Analyte Code</b> 1780	<b>Analyte</b> Ignitability	
EPA 1030	10117201	Ignitability of Solids
<b>Analyte Code</b> 1780	<b>Analyte</b> Ignitability	
EPA 1110	10118000	Corrosivity Toward Steel
<b>Analyte Code</b> 1615	<b>Analyte</b> Corrosivity	
EPA 1110A	10235208	Corrosivity Toward Steel
<b>Analyte Code</b> 1615	<b>Analyte</b> Corrosivity	
EPA 1311	10118806	Toxicity Characteristic Leaching Procedure
<b>Analyte Code</b> 308	<b>Analyte</b> Extraction/Preparation	
EPA 1312	10119003	Synthetic Precipitation Leaching Procedure
<b>Analyte Code</b> 308	<b>Analyte</b> Extraction/Preparation	
EPA 3051	10135805	Microwave Assisted Acid Digestion of Sediments, Sludges, Soils, and Oils
<b>Analyte Code</b> 308	<b>Analyte</b> Extraction/Preparation	
EPA 3051A	10136002	Microwave Assisted Acid Digestion of Sediments, Sludges, Soils, and Oils
<b>Analyte Code</b> 308	<b>Analyte</b> Extraction/Preparation	
EPA 3052	10136206	Microwave Assisted Acid Digestion of Siliceous and Organically Based Matrices
<b>Analyte Code</b> 308	<b>Analyte</b> Extraction/Preparation	
EPA 3060A	10136604	Alkaline Digestion for Hexavalent Chromium
<b>Analyte Code</b> 308	<b>Analyte</b> Extraction/Preparation	

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EPA 5035A

10284807

Closed-System Purge-and-Trap and Extraction  
for Volatile Organics in Soil and Waste Samples

### Analyte Code

### Analyte

308

Extraction/Preparation

EPA 6010B

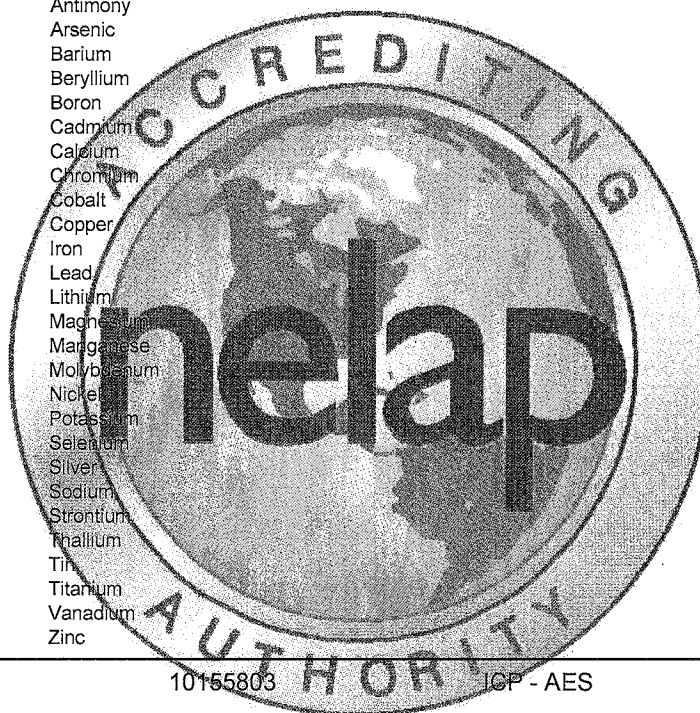
10155609

ICP - AES

### Analyte Code

### Analyte

1000 Aluminum  
1005 Antimony  
1010 Arsenic  
1015 Barium  
1020 Beryllium  
1025 Boron  
1030 Cadmium  
1035 Calcium  
1040 Chromium  
1050 Cobalt  
1055 Copper  
1070 Iron  
1075 Lead  
1080 Lithium  
1085 Magnesium  
1090 Manganese  
1100 Molybdenum  
1105 Nickel  
1125 Potassium  
1140 Selenium  
1150 Silver  
1155 Sodium  
1160 Strontium  
1165 Thallium  
1175 Tin  
1180 Titanium  
1185 Vanadium  
1190 Zinc



EPA 6010C

10155803

ICP - AES

### Analyte Code

### Analyte

1000 Aluminum  
1005 Antimony  
1010 Arsenic  
1015 Barium  
1020 Beryllium  
1025 Boron  
1030 Cadmium  
1035 Calcium  
1040 Chromium  
1050 Cobalt  
1055 Copper  
1070 Iron  
1075 Lead  
1080 Lithium  
1085 Magnesium  
1090 Manganese  
1100 Molybdenum  
1105 Nickel  
1125 Potassium  
1140 Selenium  
1150 Silver

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EPA 7471B 10166402 Mercury by Cold Vapor Atomic Absorption

Analyte Code	Analyte
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1095	Mercury
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EPA 8015B 10173601 Non-halogenated organics using GC/FID

Analyte Code	Analyte
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9369	Diesel range organics (DRO)
4750	Ethanol
9408	Gasoline range organics (GRO)
4930	Methanol

EPA 8015D 10305609 Nonhalogenated Organics Using GC/FID

Analyte Code	Analyte
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9369	Diesel range organics (DRO)
4750	Ethanol
9408	Gasoline range organics (GRO)
4930	Methanol

EPA 8021B 10174808 Aromatic and Halogenated Volatiles by GC with PID and/or ECD Purge & Trap

Analyte Code	Analyte
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4375	Benzene
4765	Ethylbenzene
5000	Methyl tert-butyl ether (MTBE)
5245	m-Xylene
5250	o-Xylene
5255	p-Xylene
5140	Toluene
5260	Xylene (total)

EPA 8081A 10178606 Organochlorine Pesticides by GC/ECD

Analyte Code	Analyte
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7355	4,4'-DDD
7360	4,4'-DDE
7365	4,4'-DDT
7005	Alachlor
7025	Aldrin
7110	alpha-BHC (alpha-Hexachlorocyclohexane)
7240	alpha-Chlordane
7115	beta-BHC (beta-Hexachlorocyclohexane)
7250	Chlordane (tech.)
7265	Chloroneb
7310	Chlorthalonil (Daconil)
7105	delta-BHC
7470	Dieldrin
7510	Endosulfan I
7515	Endosulfan II
7520	Endosulfan sulfate
7540	Endrin
7530	Endrin aldehyde
7535	Endrin ketone
7575	Etridiazole
7120	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)
7245	gamma-Chlordane
7685	Heptachlor
7690	Heptachlor epoxide
6275	Hexachlorobenzene

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Analyte Code	Analyte
8900	Aroclor-1248 (PCB-1248)
8905	Aroclor-1254 (PCB-1254)
8910	Aroclor-1260 (PCB-1260)

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EPA 8141A	10182000	Organophosphorous Pesticides by GC/NPD
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Analyte Code	Analyte
7075	Azinphos-methyl (Guthion)
7125	Bolstar (Sulprofos)
7300	Chlorpyrifos
7315	Coumaphos
7395	Demeton-o
7385	Demeton-s
7410	Diazinon
8610	Dichlorovos (DDVP, Dichlorvos)
7475	Dimethoate
8625	Disulfoton
7550	EPN
7570	Ethoprop
7600	Fensulfothion
7605	Fenthion
7770	Malathion
7785	Merphos
7825	Methyl parathion (Parathion, methyl)
7850	Mevinphos
7905	Naled
7985	Phorate
8110	Ronnel
8155	Sulfotepp
8200	Tetrachlorvinphos (Stirophos, Gardona) Z-isomer
8210	Tetraethyl pyrophosphate (TEPP)
8245	Tokuthion (Prothiophos)
8275	Trichloronate

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EPA 8141B	10182204	Organophosphorous Pesticides by GC/NPD
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Analyte Code	Analyte
7075	Azinphos-methyl (Guthion)
7125	Bolstar (Sulprofos)
7300	Chlorpyrifos
7315	Coumaphos
7395	Demeton-o
7385	Demeton-s
7410	Diazinon
8610	Dichlorovos (DDVP, Dichlorvos)
7475	Dimethoate
8625	Disulfoton
7550	EPN
7570	Ethoprop
7600	Fensulfothion
7605	Fenthion
7770	Malathion
7785	Merphos
7825	Methyl parathion (Parathion, methyl)
7850	Mevinphos
7905	Naled
7985	Phorate
8110	Ronnel
8155	Sulfotepp
8200	Tetrachlorvinphos (Stirophos, Gardona) Z-isomer
8210	Tetraethyl pyrophosphate (TEPP)

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Analyte Code	Analyte
4395	Bromodichloromethane
4397	Bromoethane (Ethyl Bromide)
4400	Bromoform
4450	Carbon disulfide
4455	Carbon tetrachloride
4475	Chlorobenzene
4575	Chlorodibromomethane
4485	Chloroethane (Ethyl chloride)
4505	Chloroform
4525	Chloroprene (2-Chloro-1,3-butadiene)
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4600	cis-1,4-Dichloro-2-butene
4555	Cyclohexane
4560	Cyclohexanone
4580	Dibromochloropropane
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4725	Diethylether
9375	Di-isopropylether (DIPE)
4750	Ethanol
4755	Ethyl acetate
4810	Ethyl methacrylate
4765	Ethylbenzene
4770	Ethyl-tert-butylether (ETBE) (2-Ethoxy-2-methylpropane)
4835	Hexachlorobutadiene
4840	Hexachloroethane
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol, Isopropanol)
4900	Isopropylbenzene
4925	Methacrylonitrile
4940	Methyl acetate
4945	Methyl acrylate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4965	Methylcyclohexane
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol, n-Butanol)
4435	n-Butylbenzene
5025	n-Nitroso-di-n-butylamine
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
5255	p-Xylene
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
303	tert-amyl alcohol
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
304	tert-butyl-formate
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene

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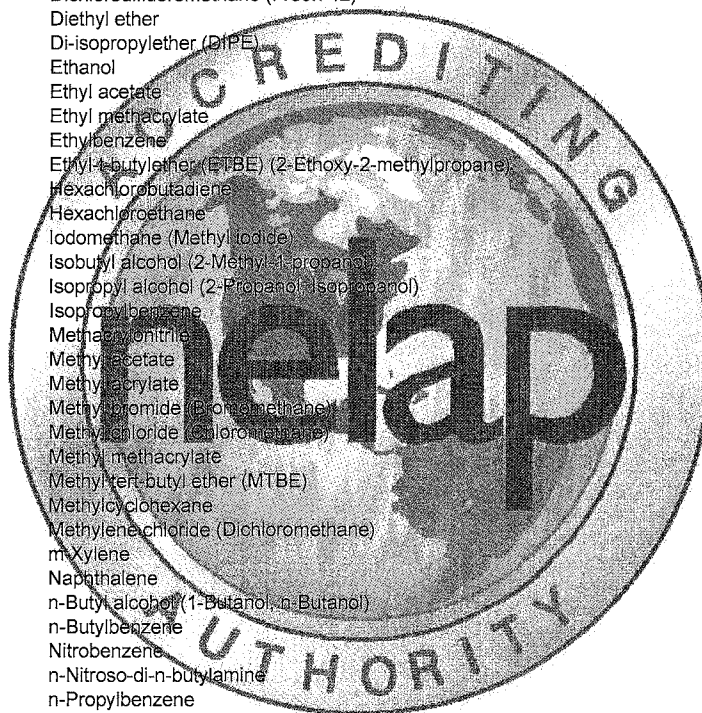
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Analyte Code	Analyte
4525	Chloroprene (2-Chloro-1,3-butadiene)
4645	cis-1,2-Dichloroethylene
4680	cis-1,3-Dichloropropene
4600	cis-1,4-Dichloro-2-butene
4555	Cyclohexane
4560	Cyclohexanone
4580	Dibromochloropropane
4595	Dibromomethane (Methylene bromide)
4625	Dichlorodifluoromethane (Freon-12)
4725	Diethyl ether
9375	Di-isopropylether (DiPE)
4750	Ethanol
4755	Ethyl acetate
4810	Ethyl methacrylate
4765	Ethylbenzene
4770	Ethyl-t-butylether (ETBE) (2-Ethoxy-2-methylpropane)
4835	Hexachlorobutadiene
4840	Hexachloroethane
4870	Iodomethane (Methyl iodide)
4875	Isobutyl alcohol (2-Methyl-1-propanol)
4895	Isopropyl alcohol (2-Propanol/Isopropanol)
4900	Isopropylbenzene
4925	Methacrylonitrile
4940	Methyl acetate
4945	Methyl acrylate
4950	Methyl bromide (Bromomethane)
4960	Methyl chloride (Chloromethane)
4990	Methyl methacrylate
5000	Methyl tert-butyl ether (MTBE)
4965	Methylcyclohexane
4975	Methylene chloride (Dichloromethane)
5245	m-Xylene
5005	Naphthalene
4425	n-Butyl alcohol (1-Butanol/ n-Butanol)
4435	n-Butylbenzene
5015	Nitrobenzene
5025	n-Nitroso-di-n-butylamine
5090	n-Propylbenzene
5250	o-Xylene
5035	Pentachloroethane
5080	Propionitrile (Ethyl cyanide)
5255	p-Xylene
6685	Safrrole
4440	sec-Butylbenzene
5100	Styrene
4370	T-amylmethylether (TAME)
4420	tert-Butyl alcohol
4445	tert-Butylbenzene
5115	Tetrachloroethylene (Perchloroethylene)
5120	Tetrahydrofuran (THF)
5140	Toluene
4700	trans-1,2-Dichloroethylene
4685	trans-1,3-Dichloropropylene
4605	trans-1,4-Dichloro-2-butene
5170	Trichloroethene (Trichloroethylene)
5175	Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)
5225	Vinyl acetate
5235	Vinyl chloride
5260	Xylene (total)



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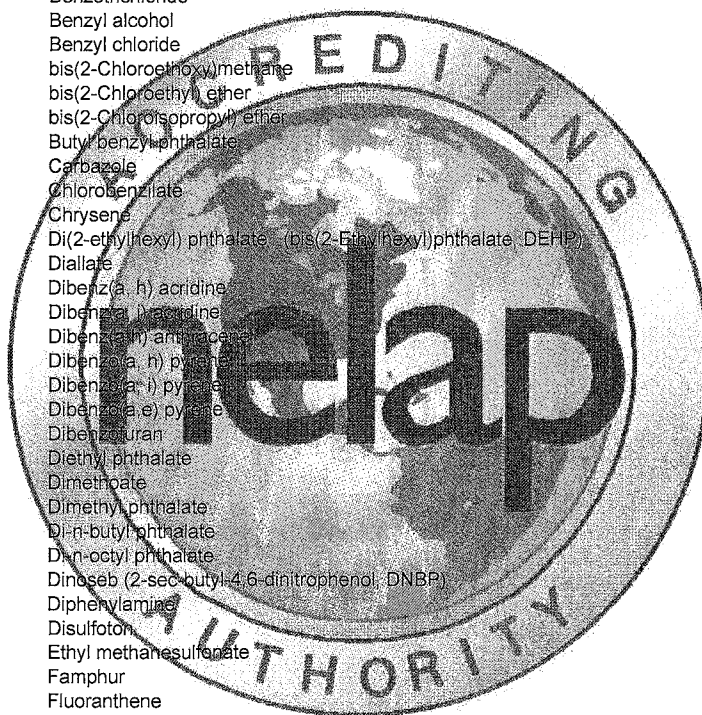
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Analyte Code	Analyte
5595	Benzidine
5575	Benzo(a)anthracene
5580	Benzo(a)pyrene
5590	Benzo(g,h,i)perylene
9309	Benzo(j)fluoranthene
5600	Benzo(k)fluoranthene
5585	Benzo[b]fluoranthene
5610	Benzoic acid
5625	Benzotrichloride
5630	Benzyl alcohol
5635	Benzyl chloride
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloropropyl) ether
5670	Butyl benzylphthalate
5680	Carbazole
7260	Chlorobenzilate
5855	Chrysene
6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
7405	Diallylate
9354	Dibenz(a,h)acridine
5900	Dibenz(a,h)acridine
5895	Dibenz(a,h)anthracene
9348	Dibenz(a,h)pyrene
9351	Dibenz(a,h)pyrene
5890	Dibenz(a,e)pyrene
5905	Dibenzofuran
6070	Diethyl phthalate
7475	Dimethoate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
6205	Diphenylamine
8625	Disulfoton
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene
6285	Hexachlorocyclopentadiene
4840	Hexachloroethane
6290	Hexachlorophene
6295	Hexachloropropene
6315	Indeno(1,2,3-cd) pyrene
7725	Isodrin
6320	Isophorone
6325	Isosafrole
7740	Kepone
6345	Methapyrilene
6375	Methyl methanesulfonate
7825	Methyl parathion (Parathion, methyl)
5005	Naphthalene
5015	Nitrobenzene
6525	n-Nitrosodiethylamine
6530	n-Nitrosodimethylamine
5025	n-Nitroso-di-n-butylamine
6545	n-Nitrosodi-n-propylamine
6535	n-Nitrosodiphenylamine
6550	n-Nitrosomethylethalamine



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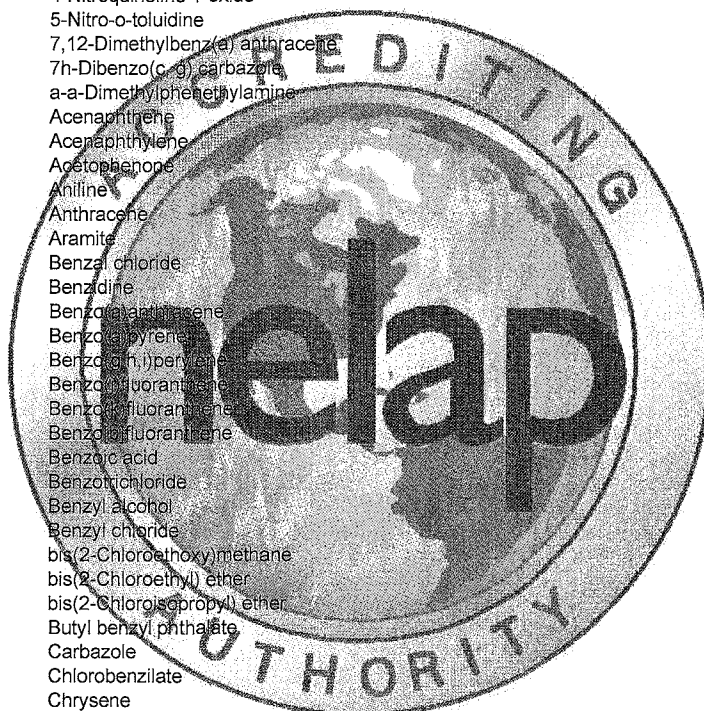
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Analyte Code	Analyte
5660	4-Bromophenyl phenyl ether
5700	4-Chloro-3-methylphenol
5745	4-Chloroaniline
5825	4-Chlorophenyl phenylether
6105	4-Dimethyl aminoazobenzene
6410	4-Methylphenol (p-Cresol)
6470	4-Nitroaniline
6500	4-Nitrophenol
6510	4-Nitroquinoline 1-oxide
6570	5-Nitro-o-toluidine
6115	7,12-Dimethylbenz(a) anthracene
9417	7h-Dibenzo(c,g) carbazole
6125	a-a-Dimethylphenethylamine
5500	Acenaphthene
5505	Acenaphthylene
5510	Acetophenone
5545	Aniline
5555	Anthracene
5560	Aramite
5565	Benzal chloride
5595	Benzidine
5575	Benz(a)anthracene
5580	Benz(a)pyrene
5590	Benz(a,h,i)perylene
9309	Benzofluoranthene
5600	Benzofluoranthene
5585	Benzofluoranthene
5610	Benzoic acid
5625	Benzotrifluoride
5630	Benzyl alcohol
5635	Benzyl chloride
5760	bis(2-Chloroethoxy)methane
5765	bis(2-Chloroethyl) ether
5780	bis(2-Chloroisopropyl) ether
5670	Butyl benzyl phthalate
5680	Carbazole
7260	Chlorobenzilate
5855	Chrysene
6065	Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)
7405	Diallate
9354	Dibenz(a, h) acridine
5900	Dibenz(a, j) acridine
5895	Dibenz(a,h) anthracene
9348	Dibenzo(a, h) pyrene
9351	Dibenzo(a, i) pyrene
5890	Dibenzo(a,e) pyrene
5905	Dibenzofuran
6070	Diethyl phthalate
7475	Dimethoate
6135	Dimethyl phthalate
5925	Di-n-butyl phthalate
6200	Di-n-octyl phthalate
8620	Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)
6205	Diphenylamine
8625	Disulfoton
6260	Ethyl methanesulfonate
7580	Famphur
6265	Fluoranthene
6270	Fluorene
6275	Hexachlorobenzene
4835	Hexachlorobutadiene



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EPA 8330

10189807

Nitroaromatics and Nitramines by HPLC/UV-VIS

Analyte Code	Analyte
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
6160	1,3-Dinitrobenzene (1,3-DNB)
9651	2,4,6-Trinitrotoluene (2,4,6-TNT)
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
9303	2-Amino-4,6-dinitrotoluene (2-am-dnt)
6462	2-Nitroguanidine
9507	2-Nitrotoluene
9510	3-Nitrotoluene
9306	4-Amino-2,6-dinitrotoluene (4-am-dnt)
9513	4-Nitrotoluene
6415	Methyl-2,4,6-trinitrophenylnitramine (tetryl)
5015	Nitrobenzene
6485	Nitroglycerin
9522	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
9558	Pentaerythritoltetranitrate
9432	RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)

EPA 8330A

10190008

Nitroaromatics and Nitramines by High Performance Liquid Chromatography (HPLC)

Analyte Code	Analyte
6885	1,3,5-Trinitrobenzene (1,3,5-TNB)
6160	1,3-Dinitrobenzene (1,3-DNB)
9651	2,4,6-Trinitrotoluene (2,4,6-TNT)
6185	2,4-Dinitrotoluene (2,4-DNT)
6190	2,6-Dinitrotoluene (2,6-DNT)
9303	2-Amino-4,6-dinitrotoluene (2-am-dnt)
9507	2-Nitrotoluene
9510	3-Nitrotoluene
9306	4-Amino-2,6-dinitrotoluene (4-am-dnt)
9513	4-Nitrotoluene
6415	Methyl-2,4,6-trinitrophenylnitramine (tetryl)
5015	Nitrobenzene
6485	Nitroglycerin
9522	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)
9558	Pentaerythritoltetranitrate
9432	RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)

EPA 9010B

10193007

Total and Amenable Cyanide by Distillation and UV-Vis

Analyte Code	Analyte
1510	Amenable cyanide
1645	Total cyanide

EPA 9010C

10243002

Total and Amenable Cyanide by Distillation and UV-Vis

Analyte Code	Analyte
1510	Amenable cyanide
1645	Total cyanide

EPA 9012A

10193405

Total and Amenable Cyanide (automated colorimetric with off-line distillation)

Analyte Code	Analyte
1645	Total cyanide

EPA 9012B

10243206

Total and Amenable Cyanide (automated colorimetric with off-line distillation)

Analyte Code	Analyte
--------------	---------

## ORELAP Fields of Accreditation

ORELAP ID: TN200002

EPA CODE: TN00003

Certificate: TN200002 - 008

### Environmental Science Corporation

12065 Lebanon Road

Mt. Juliet

TN 37122

Issue Date: 01/16/2011

Expiration Date: 01/15/2012

As of 01/16/2011 this list supercedes all previous lists for this certificate number.

Customers. Please verify the current accreditation standing with ORELAP.

Analyte Code	Analyte	
1835	Nitrite	
1870	Orthophosphate as P	
2000	Sulfate	
EPA 9060	10200201	Total Organic Carbon
Analyte Code	Analyte	
2040	Total organic carbon	
EPA 9060A	10244801	Total Organic Carbon
Analyte Code	Analyte	
2040	Total organic carbon	
EPA 9071B	10201602	Oil and Grease Extraction Method for sludge and sediment samples
Analyte Code	Analyte	
1860	Oil & Grease	
EPA 9095	10204009	Paint Filter Liquids Test
Analyte Code	Analyte	
308	Extraction/Preparation	
EPA 9095A	10204203	Paint Filter Liquids Test
Analyte Code	Analyte	
308	Extraction/Preparation	
NWTPH-Dx	90018409	Oregon DEQ TPH Diesel Range
Analyte Code	Analyte	
9369	Diesel range organics (DRO)	
NWTPH-Gx	90018603	Oregon DEQ TPH Gasoline Range Organics by GC/FID-PID Purge & Trap
Analyte Code	Analyte	
9408	Gasoline range organics (GRO)	
NWTPH-HCID	90013200	Oregon DEQ Total Petroleum Hydrocarbon ID
Analyte Code	Analyte	
2050	Total Petroleum Hydrocarbons (TPH)	
OA-1	90013802	Iowa TPH Gx by GC/PID Purge & Trap
Analyte Code	Analyte	
9408	Gasoline range organics (GRO)	
OA-2	90014009	Iowa TPH Dx
Analyte Code	Analyte	
9369	Diesel range organics (DRO)	
SM 2540 G 20th ED	20005258	Total, Fixed, and Volatile Solids in Solid and Semisolid Samples
Analyte Code	Analyte	
1725	Total, fixed, and volatile residue	



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Stephanie Bosze  
Oregon Dept. of Env. Quality - ODEQ  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

## Report Summary

Tuesday May 10, 2011

Report Number: L513596

Samples Received: 04/29/11

Client Project: 1843-00

Description: Taylor Lumber

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jayred Willis , ESC Representative

### Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - I-2327, CT - PH-0197, FL - E87487  
GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704, ND - R-140  
NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 00109, WV - 233  
AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032008A,  
TX - T104704245, OK-9915

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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# REPORT OF ANALYSIS

Stephanie Bosze  
Oregon Dept. of Env. Quality - ODEQ  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-15S

Collected By : Michael Whitson  
Collection Date : 04/26/11 11:45

ESC Sample # : L513596-01

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	12.	0.33	1.0	ug/l		8270C	05/02/11	1
Surrogate Recovery								
2-Fluorophenol	34.6			% Rec.		8270C	05/02/11	1
Phenol-d5	24.0			% Rec.		8270C	05/02/11	1
Nitrobenzene-d5	80.9			% Rec.		8270C	05/02/11	1
2-Fluorobiphenyl	95.6			% Rec.		8270C	05/02/11	1
2,4,6-Tribromophenol	83.2			% Rec.		8270C	05/02/11	1
p-Terphenyl-d14	97.7			% Rec.		8270C	05/02/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

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Oregon Dept. of Env. Quality - ODEQ  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-13S

Collected By : Michael Whitson  
Collection Date : 04/26/11 13:00

ESC Sample # : L513596-02

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l	L2	8270C	05/02/11	1
Surrogate Recovery								
2-Fluorophenol	0.940			% Rec.	J2	8270C	05/02/11	1
Phenol-d5	0.510			% Rec.	J2	8270C	05/02/11	1
Nitrobenzene-d5	73.9			% Rec.		8270C	05/02/11	1
2-Fluorobiphenyl	91.9			% Rec.		8270C	05/02/11	1
2,4,6-Tribromophenol	24.8			% Rec.		8270C	05/02/11	1
p-Terphenyl-d14	108.			% Rec.		8270C	05/02/11	1

U = ND (Not Detected)

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3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-12S

Collected By : Michael Whitson  
Collection Date : 04/26/11 14:10

ESC Sample # : L513596-03

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/04/11	1
Surrogate Recovery								
2-Fluorophenol	17.7			% Rec.		8270C	05/04/11	1
Phenol-d5	14.5			% Rec.		8270C	05/04/11	1
Nitrobenzene-d5	69.8			% Rec.		8270C	05/04/11	1
2-Fluorobiphenyl	82.4			% Rec.		8270C	05/04/11	1
2,4,6-Tribromophenol	94.9			% Rec.		8270C	05/04/11	1
p-Terphenyl-d14	105.			% Rec.		8270C	05/04/11	1

U = ND (Not Detected)

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3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-06S

Collected By : Michael Whitson  
Collection Date : 04/26/11 16:20

ESC Sample # : L513596-04

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/02/11	1
Surrogate Recovery								
2-Fluorophenol	23.3			% Rec.		8270C	05/02/11	1
Phenol-d5	17.5			% Rec.		8270C	05/02/11	1
Nitrobenzene-d5	69.8			% Rec.		8270C	05/02/11	1
2-Fluorobiphenyl	83.0			% Rec.		8270C	05/02/11	1
2,4,6-Tribromophenol	58.0			% Rec.		8270C	05/02/11	1
p-Terphenyl-d14	112.			% Rec.		8270C	05/02/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-06S DUP

Collected By : Michael Whitson  
Collection Date : 04/26/11 16:20

ESC Sample # : L513596-05

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/02/11	1
Surrogate Recovery								
2-Fluorophenol	21.1			% Rec.		8270C	05/02/11	1
Phenol-d5	16.8			% Rec.		8270C	05/02/11	1
Nitrobenzene-d5	71.3			% Rec.		8270C	05/02/11	1
2-Fluorobiphenyl	89.4			% Rec.		8270C	05/02/11	1
2,4,6-Tribromophenol	48.8			% Rec.		8270C	05/02/11	1
p-Terphenyl-d14	111.			% Rec.		8270C	05/02/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : PZ-102

Collected By : Michael Whitson  
Collection Date : 04/27/11 08:50

ESC Sample # : L513596-06

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/04/11	1
Surrogate Recovery								
2-Fluorophenol	31.7			% Rec.		8270C	05/04/11	1
Phenol-d5	21.9			% Rec.		8270C	05/04/11	1
Nitrobenzene-d5	65.8			% Rec.		8270C	05/04/11	1
2-Fluorobiphenyl	70.7			% Rec.		8270C	05/04/11	1
2,4,6-Tribromophenol	82.1			% Rec.		8270C	05/04/11	1
p-Terphenyl-d14	72.4			% Rec.		8270C	05/04/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

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May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-103S

Collected By : Michael Whitson  
Collection Date : 04/27/11 09:50

ESC Sample # : L513596-07

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	1.6	0.33	1.0	ug/l		8270C	05/04/11	1
Surrogate Recovery								
2-Fluorophenol	15.6			% Rec.		8270C	05/04/11	1
Phenol-d5	11.1			% Rec.		8270C	05/04/11	1
Nitrobenzene-d5	59.0			% Rec.		8270C	05/04/11	1
2-Fluorobiphenyl	71.6			% Rec.		8270C	05/04/11	1
2,4,6-Tribromophenol	46.2			% Rec.		8270C	05/04/11	1
p-Terphenyl-d14	86.5			% Rec.		8270C	05/04/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

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3150 NW 229th St., Suite 150  
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May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-20S

Collected By : Michael Whitson  
Collection Date : 04/27/11 10:45

ESC Sample # : L513596-08

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/03/11	1
Surrogate Recovery								
2-Fluorophenol	30.6			% Rec.		8270C	05/03/11	1
Phenol-d5	25.2			% Rec.		8270C	05/03/11	1
Nitrobenzene-d5	74.0			% Rec.		8270C	05/03/11	1
2-Fluorobiphenyl	80.4			% Rec.		8270C	05/03/11	1
2,4,6-Tribromophenol	62.5			% Rec.		8270C	05/03/11	1
p-Terphenyl-d14	96.3			% Rec.		8270C	05/03/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-19S

Collected By : Michael Whitson  
Collection Date : 04/27/11 11:50

ESC Sample # : L513596-09

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/03/11	1
Surrogate Recovery								
2-Fluorophenol	26.6			% Rec.		8270C	05/03/11	1
Phenol-d5	20.4			% Rec.		8270C	05/03/11	1
Nitrobenzene-d5	77.8			% Rec.		8270C	05/03/11	1
2-Fluorobiphenyl	83.2			% Rec.		8270C	05/03/11	1
2,4,6-Tribromophenol	71.5			% Rec.		8270C	05/03/11	1
p-Terphenyl-d14	102.			% Rec.		8270C	05/03/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : PZ-101

Collected By : Michael Whitson  
Collection Date : 04/27/11 13:00

ESC Sample # : L513596-10

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/03/11	1
Surrogate Recovery								
2-Fluorophenol	30.4			% Rec.		8270C	05/03/11	1
Phenol-d5	22.6			% Rec.		8270C	05/03/11	1
Nitrobenzene-d5	72.2			% Rec.		8270C	05/03/11	1
2-Fluorobiphenyl	78.2			% Rec.		8270C	05/03/11	1
2,4,6-Tribromophenol	77.2			% Rec.		8270C	05/03/11	1
p-Terphenyl-d14	94.7			% Rec.		8270C	05/03/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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# REPORT OF ANALYSIS

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3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-1S

Collected By : Michael Whitson  
Collection Date : 04/27/11 14:00

ESC Sample # : L513596-11

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/09/11	1
Surrogate Recovery								
2-Fluorophenol	7.30			% Rec.	J2	8270C	05/09/11	1
Phenol-d5	4.80			% Rec.	J2	8270C	05/09/11	1
Nitrobenzene-d5	61.1			% Rec.		8270C	05/09/11	1
2-Fluorobiphenyl	73.6			% Rec.		8270C	05/09/11	1
2,4,6-Tribromophenol	27.0			% Rec.		8270C	05/09/11	1
p-Terphenyl-d14	91.2			% Rec.		8270C	05/09/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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L513596-11 (SV8270PCP) - Previous run also had low SURR recovery. Matrix effect.



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(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

# REPORT OF ANALYSIS

Stephanie Bosze  
Oregon Dept. of Env. Quality - ODEQ  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-11S

Collected By : Michael Whitson  
Collection Date : 04/27/11 15:00

ESC Sample # : L513596-12

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	0.87	0.33	1.0	ug/l	J	8270C	05/02/11	1
Surrogate Recovery								
2-Fluorophenol	21.2			% Rec.		8270C	05/02/11	1
Phenol-d5	15.6			% Rec.		8270C	05/02/11	1
Nitrobenzene-d5	76.0			% Rec.		8270C	05/02/11	1
2-Fluorobiphenyl	89.6			% Rec.		8270C	05/02/11	1
2,4,6-Tribromophenol	58.1			% Rec.		8270C	05/02/11	1
p-Terphenyl-d14	113.			% Rec.		8270C	05/02/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

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Oregon Dept. of Env. Quality - ODEQ  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-25S

Collected By : Michael Whitson  
Collection Date : 04/27/11 16:10

ESC Sample # : L513596-13

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	230	6.7	20.	ug/l		8270C	05/09/11	20
Surrogate Recovery								
2-Fluorophenol	0.00			% Rec.	J7	8270C	05/09/11	20
Phenol-d5	0.00			% Rec.	J7	8270C	05/09/11	20
Nitrobenzene-d5	0.00			% Rec.	J7	8270C	05/09/11	20
2-Fluorobiphenyl	0.00			% Rec.	J7	8270C	05/09/11	20
2,4,6-Tribromophenol	0.00			% Rec.	J7	8270C	05/09/11	20
p-Terphenyl-d14	0.00			% Rec.	J7	8270C	05/09/11	20

U = ND (Not Detected)

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Oregon Dept. of Env. Quality - ODEQ  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : RW-01

Collected By : Michael Whitson  
Collection Date : 04/27/11 17:25

ESC Sample # : L513596-14

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/02/11	1
Surrogate Recovery								
2-Fluorophenol	38.9			% Rec.		8270C	05/02/11	1
Phenol-d5	28.0			% Rec.		8270C	05/02/11	1
Nitrobenzene-d5	74.6			% Rec.		8270C	05/02/11	1
2-Fluorobiphenyl	87.3			% Rec.		8270C	05/02/11	1
2,4,6-Tribromophenol	86.2			% Rec.		8270C	05/02/11	1
p-Terphenyl-d14	117.			% Rec.		8270C	05/02/11	1

U = ND (Not Detected)

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Oregon Dept. of Env. Quality - ODEQ  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-10S

Collected By : Michael Whitson  
Collection Date : 04/27/11 17:45

ESC Sample # : L513596-15

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/02/11	1
Surrogate Recovery								
2-Fluorophenol	48.5			% Rec.		8270C	05/02/11	1
Phenol-d5	37.1			% Rec.		8270C	05/02/11	1
Nitrobenzene-d5	77.4			% Rec.		8270C	05/02/11	1
2-Fluorobiphenyl	88.9			% Rec.		8270C	05/02/11	1
2,4,6-Tribromophenol	73.7			% Rec.		8270C	05/02/11	1
p-Terphenyl-d14	109.			% Rec.		8270C	05/02/11	1

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3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-24S

Collected By : Michael Whitson  
Collection Date : 04/27/11 18:35

ESC Sample # : L513596-16

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/04/11	1
Surrogate Recovery								
2-Fluorophenol	29.2			% Rec.		8270C	05/04/11	1
Phenol-d5	21.9			% Rec.		8270C	05/04/11	1
Nitrobenzene-d5	63.6			% Rec.		8270C	05/04/11	1
2-Fluorobiphenyl	77.5			% Rec.		8270C	05/04/11	1
2,4,6-Tribromophenol	100.			% Rec.		8270C	05/04/11	1
p-Terphenyl-d14	102.			% Rec.		8270C	05/04/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

Note:

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# REPORT OF ANALYSIS

Stephanie Bosze  
Oregon Dept. of Env. Quality - ODEQ  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : PZ105

Collected By : Michael Whitson  
Collection Date : 04/26/11 10:15

ESC Sample # : L513596-17

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/02/11	1
Surrogate Recovery								
2-Fluorophenol	29.5			% Rec.		8270C	05/02/11	1
Phenol-d5	18.8			% Rec.		8270C	05/02/11	1
Nitrobenzene-d5	69.7			% Rec.		8270C	05/02/11	1
2-Fluorobiphenyl	82.8			% Rec.		8270C	05/02/11	1
2,4,6-Tribromophenol	80.9			% Rec.		8270C	05/02/11	1
p-Terphenyl-d14	98.1			% Rec.		8270C	05/02/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-06D

Collected By : Michael Whitson  
Collection Date : 04/26/11 15:10

ESC Sample # : L513596-18

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/04/11	1
Surrogate Recovery								
2-Fluorophenol	26.3			% Rec.		8270C	05/04/11	1
Phenol-d5	21.1			% Rec.		8270C	05/04/11	1
Nitrobenzene-d5	67.6			% Rec.		8270C	05/04/11	1
2-Fluorobiphenyl	81.1			% Rec.		8270C	05/04/11	1
2,4,6-Tribromophenol	107.			% Rec.		8270C	05/04/11	1
p-Terphenyl-d14	100.			% Rec.		8270C	05/04/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-9S

Collected By : Michael Whitson  
Collection Date : 04/26/11 17:50

ESC Sample # : L513596-19

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	U	0.33	1.0	ug/l		8270C	05/02/11	1
Surrogate Recovery								
2-Fluorophenol	34.2			% Rec.		8270C	05/02/11	1
Phenol-d5	23.0			% Rec.		8270C	05/02/11	1
Nitrobenzene-d5	79.4			% Rec.		8270C	05/02/11	1
2-Fluorobiphenyl	95.2			% Rec.		8270C	05/02/11	1
2,4,6-Tribromophenol	90.9			% Rec.		8270C	05/02/11	1
p-Terphenyl-d14	118.			% Rec.		8270C	05/02/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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Oregon Dept. of Env. Quality - ODEQ  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-16S

Collected By : Michael Whitson  
Collection Date : 04/26/11 08:00

ESC Sample # : L513596-20

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	11.	0.33	1.0	ug/l		8270C	05/02/11	1
Surrogate Recovery								
2-Fluorophenol	20.7			% Rec.		8270C	05/02/11	1
Phenol-d5	15.7			% Rec.		8270C	05/02/11	1
Nitrobenzene-d5	79.0			% Rec.		8270C	05/02/11	1
2-Fluorobiphenyl	96.6			% Rec.		8270C	05/02/11	1
2,4,6-Tribromophenol	50.6			% Rec.		8270C	05/02/11	1
p-Terphenyl-d14	113.			% Rec.		8270C	05/02/11	1

U = ND (Not Detected)

RDL = Reported Detection Limit = LOQ = PQL = EQL

MDL = Minimum Detection Limit = LOD = SQL(TRRP)

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# REPORT OF ANALYSIS

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Oregon Dept. of Env. Quality - ODEQ  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

May 10, 2011

Date Received : April 29, 2011  
Description : Taylor Lumber

Sample ID : MW-16S DUP

Collected By : Michael Whitson  
Collection Date : 04/26/11 08:00

ESC Sample # : L513596-21

Site ID :

Project # : 1843-00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Acid Extractables								
Pentachlorophenol	11.	0.33	1.0	ug/l		8270C	05/02/11	1
Surrogate Recovery								
2-Fluorophenol	16.2			% Rec.		8270C	05/02/11	1
Phenol-d5	12.4			% Rec.		8270C	05/02/11	1
Nitrobenzene-d5	69.4			% Rec.		8270C	05/02/11	1
2-Fluorobiphenyl	81.4			% Rec.		8270C	05/02/11	1
2,4,6-Tribromophenol	42.2			% Rec.		8270C	05/02/11	1
p-Terphenyl-d14	97.8			% Rec.		8270C	05/02/11	1

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Attachment A  
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L513596-02	WG533611	SAMP	Pentachlorophenol	R1672209	L2
	WG533611	SAMP	2-Fluorophenol	R1672209	J2
	WG533611	SAMP	Phenol-d5	R1672209	J2
L513596-11	WG534152	SAMP	2-Fluorophenol	R1676731	J2
	WG534152	SAMP	Phenol-d5	R1676731	J2
L513596-12	WG533677	SAMP	Pentachlorophenol	R1670132	J
L513596-13	WG533677	SAMP	2-Fluorophenol	R1670132	J7
	WG533677	SAMP	Phenol-d5	R1670132	J7
	WG533677	SAMP	Nitrobenzene-d5	R1670132	J7
	WG533677	SAMP	2-Fluorobiphenyl	R1670132	J7
	WG533677	SAMP	2,4,6-Tribromophenol	R1670132	J7
	WG533677	SAMP	p-Terphenyl-d14	R1670132	J7
	WG533677	SAMP			

Attachment B  
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits
J7	Surrogate recovery limits cannot be evaluated; surrogates were diluted out
L2	(ESC) The associated surrogate compound falls below 10%. The data should be used with caution. A re-extraction was not possible due to limited sample volume.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed  
05/10/11 at 14:57:38

TSR Signing Reports: 358  
R5 - Desired TAT

5035 terracore kits needed for ALL soil VOCs. Log p-key under project manager's name if one is not already created with the specific project name. Contract # 8903.

Sample: L513596-01 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-02 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-03 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-04 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
MS/MSD this Sample. Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-05 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-06 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-07 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-08 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-09 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-10 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-11 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-12 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-13 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-14 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-15 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-16 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-17 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-18 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-19 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-20 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw  
Sample: L513596-21 Account: OREGONDEQ Received: 04/29/11 08:30 Due Date: 05/06/11 00:00 RPT Date: 05/10/11 10:24  
Reporting PCP only. PCP needed at 1 ug/l. jw



YOUR LAB OF CHOICE

Oregon Dept. of Env. Quality - ODEQ  
Stephanie Bosze  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

Quality Assurance Report  
Level II

L513596

12065 Lebanon Rd.  
Mt. Juliet, TN 37122  
(615) 758-5858  
1-800-767-5859  
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 10, 2011

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Pentachlorophenol	< .001	mg/l			WG533677	05/02/11 12:31
2,4,6-Tribromophenol		mg/l	54.14	10-148	WG533677	05/02/11 12:31
2-Fluorobiphenyl		mg/l	86.28	26-122	WG533677	05/02/11 12:31
2-Fluorophenol		mg/l	44.37	10-87	WG533677	05/02/11 12:31
Nitrobenzene-d5		mg/l	82.94	12-120	WG533677	05/02/11 12:31
Phenol-d5		mg/l	34.50	10-67	WG533677	05/02/11 12:31
p-Terphenyl-d14		mg/l	121.8	34-149	WG533677	05/02/11 12:31
Pentachlorophenol	< .001	mg/l			WG533611	05/02/11 13:44
2,4,6-Tribromophenol		mg/l	91.50	10-148	WG533611	05/02/11 13:44
2-Fluorobiphenyl		mg/l	86.49	26-122	WG533611	05/02/11 13:44
2-Fluorophenol		mg/l	34.37	10-87	WG533611	05/02/11 13:44
Nitrobenzene-d5		mg/l	68.49	12-120	WG533611	05/02/11 13:44
Phenol-d5		mg/l	23.12	10-67	WG533611	05/02/11 13:44
p-Terphenyl-d14		mg/l	121.6	34-149	WG533611	05/02/11 13:44
Pentachlorophenol	< .001	mg/l			WG533676	05/04/11 15:50
2,4,6-Tribromophenol		mg/l	60.82	10-148	WG533676	05/04/11 15:50
2-Fluorobiphenyl		mg/l	75.34	26-122	WG533676	05/04/11 15:50
2-Fluorophenol		mg/l	35.44	10-87	WG533676	05/04/11 15:50
Nitrobenzene-d5		mg/l	70.75	12-120	WG533676	05/04/11 15:50
Phenol-d5		mg/l	25.66	10-67	WG533676	05/04/11 15:50
p-Terphenyl-d14		mg/l	88.46	34-149	WG533676	05/04/11 15:50
Pentachlorophenol	< .001	mg/l			WG533851	05/04/11 13:46
2,4,6-Tribromophenol		mg/l	70.39	10-148	WG533851	05/04/11 13:46
2-Fluorobiphenyl		mg/l	82.57	26-122	WG533851	05/04/11 13:46
2-Fluorophenol		mg/l	26.86	10-87	WG533851	05/04/11 13:46
Nitrobenzene-d5		mg/l	69.67	12-120	WG533851	05/04/11 13:46
Phenol-d5		mg/l	18.10	10-67	WG533851	05/04/11 13:46
p-Terphenyl-d14		mg/l	96.12	34-149	WG533851	05/04/11 13:46
Pentachlorophenol	< .001	mg/l			WG534152	05/05/11 14:27
2,4,6-Tribromophenol		mg/l	94.18	10-148	WG534152	05/05/11 14:27
2-Fluorobiphenyl		mg/l	82.82	26-122	WG534152	05/05/11 14:27
2-Fluorophenol		mg/l	63.21	10-87	WG534152	05/05/11 14:27
Nitrobenzene-d5		mg/l	75.92	12-120	WG534152	05/05/11 14:27
Phenol-d5		mg/l	53.85	10-67	WG534152	05/05/11 14:27
p-Terphenyl-d14		mg/l	137.5	34-149	WG534152	05/05/11 14:27

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Pentachlorophenol	mg/l	.01	0.00440	44.0	20-122	WG533677
2,4,6-Tribromophenol				72.65	10-148	WG533677
2-Fluorobiphenyl				85.95	26-122	WG533677
2-Fluorophenol				49.62	10-87	WG533677
Nitrobenzene-d5				87.06	12-120	WG533677
Phenol-d5				41.38	10-67	WG533677
p-Terphenyl-d14				125.6	34-149	WG533677
Pentachlorophenol	mg/l	.01	0.00817	81.7	20-122	WG533611
2,4,6-Tribromophenol				90.22	10-148	WG533611
2-Fluorobiphenyl				90.94	26-122	WG533611

\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
2-Fluorophenol				34.14	10-87	
Nitrobenzene-d5				81.79	12-120	
Phenol-d5				22.44	10-67	
p-Terphenyl-d14				110.8	34-149	
Pentachlorophenol	mg/l	.01	0.00476	47.6	20-122	WG533676
2,4,6-Tribromophenol				89.08	10-148	WG533676
2-Fluorobiphenyl				84.95	26-122	WG533676
2-Fluorophenol				36.45	10-87	WG533676
Nitrobenzene-d5				74.84	12-120	WG533676
Phenol-d5				26.77	10-67	WG533676
p-Terphenyl-d14				96.26	34-149	WG533676
Pentachlorophenol	mg/l	.01	0.00765	76.5	20-122	WG533851
2,4,6-Tribromophenol				104.6	10-148	WG533851
2-Fluorobiphenyl				82.38	26-122	WG533851
2-Fluorophenol				35.97	10-87	WG533851
Nitrobenzene-d5				68.60	12-120	WG533851
Phenol-d5				25.95	10-67	WG533851
p-Terphenyl-d14				95.56	34-149	WG533851
Pentachlorophenol	mg/l	.01	0.00904	90.4	20-122	WG534152
2,4,6-Tribromophenol				98.21	10-148	WG534152
2-Fluorobiphenyl				86.78	26-122	WG534152
2-Fluorophenol				58.08	10-87	WG534152
Nitrobenzene-d5				81.90	12-120	WG534152
Phenol-d5				47.07	10-67	WG534152
p-Terphenyl-d14				115.0	34-149	WG534152

Analyte	Units	Laboratory Control Result	Control Ref	Sample %Rec	Limit	RPD	Limit	Batch
Pentachlorophenol	mg/l	0.00637	0.00440	64.0	20-122	36.7	50	WG533677
2,4,6-Tribromophenol				88.51	10-148			WG533677
2-Fluorobiphenyl				86.85	26-122			WG533677
2-Fluorophenol				54.12	10-87			WG533677
Nitrobenzene-d5				96.21	12-120			WG533677
Phenol-d5				40.97	10-67			WG533677
p-Terphenyl-d14				122.2	34-149			WG533677
Pentachlorophenol	mg/l	0.00865	0.00817	86.0	20-122	5.66	50	WG533611
2,4,6-Tribromophenol				94.41	10-148			WG533611
2-Fluorobiphenyl				91.80	26-122			WG533611
2-Fluorophenol				36.83	10-87			WG533611
Nitrobenzene-d5				86.27	12-120			WG533611
Phenol-d5				25.73	10-67			WG533611
p-Terphenyl-d14				106.0	34-149			WG533611
Pentachlorophenol	mg/l	0.00437	0.00476	44.0	20-122	8.62	50	WG533676
2,4,6-Tribromophenol				84.88	10-148			WG533676
2-Fluorobiphenyl				82.23	26-122			WG533676
2-Fluorophenol				37.79	10-87			WG533676
Nitrobenzene-d5				70.67	12-120			WG533676
Phenol-d5				26.93	10-67			WG533676
p-Terphenyl-d14				98.25	34-149			WG533676

\* Performance of this Analyte is outside of established criteria.  
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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Pentachlorophenol	mg/l	0.00820	0.00765	82.0		20-122	6.94	50	WG533851
2,4,6-Tribromophenol				106.9		10-148			WG533851
2-Fluorobiphenyl				87.10		26-122			WG533851
2-Fluorophenol				35.78		10-87			WG533851
Nitrobenzene-d5				70.97		12-120			WG533851
Phenol-d5				25.44		10-67			WG533851
p-Terphenyl-d14				95.74		34-149			WG533851

Pentachlorophenol	mg/l	0.00831	0.00904	83.0		20-122	8.45	50	WG534152
2,4,6-Tribromophenol				91.39		10-148			WG534152
2-Fluorobiphenyl				80.98		26-122			WG534152
2-Fluorophenol				58.25		10-87			WG534152
Nitrobenzene-d5				74.15		12-120			WG534152
Phenol-d5				51.68		10-67			WG534152
p-Terphenyl-d14				105.3		34-149			WG534152

Analyte	Units	MS Res	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
			Ref Res						
Pentachlorophenol	mg/l	0.00840	0	.01		84.0	0-137	L513596-04	WG533611
2,4,6-Tribromophenol						78.45	10-148		WG533611
2-Fluorobiphenyl						91.84	26-122		WG533611
2-Fluorophenol						28.45	10-87		WG533611
Nitrobenzene-d5						83.09	12-120		WG533611
Phenol-d5						20.56	10-67		WG533611
p-Terphenyl-d14						115.7	34-149		WG533611

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Pentachlorophenol	mg/l	0.00895	0.00840	89.5	0-137	6.42	50	L513596-04	WG533611
2,4,6-Tribromophenol				77.64	10-148				WG533611
2-Fluorobiphenyl				94.14	26-122				WG533611
2-Fluorophenol				31.73	10-87				WG533611
Nitrobenzene-d5				83.66	12-120				WG533611
Phenol-d5				22.89	10-67				WG533611
p-Terphenyl-d14				110.6	34-149				WG533611

Batch number /Run number / Sample number cross reference

WG533677: R1670132: L513596-08 09 10 12 13 14 15  
WG533611: R1672209: L513596-01 02 04 05 17 19 20 21  
WG533676: R1675129: L513596-06 07  
WG533851: R1675133: L513596-03 16 18  
WG534152: R1676731: L513596-11

\* \* Calculations are performed prior to rounding of reported values.  
\* Performance of this Analyte is outside of established criteria.  
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Est. 1970

May 10, 2011

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

**Oregon Dept. of Env. Quality -  
ODEQ**  
3150 NW 229th St., Suite 150  
Hillsboro, OR 97124

**Billing information:**

Delia Chadwick - ODEQ  
811 SW Sixth Avenue  
Portland, OR 97204

**Analysis/Container/Preservative**

Chain of Custody  
Page 1 of 3



12065 Lebanon Road  
Mt. Juliet, TN 37122

Phone: (800) 767-5859  
Phone: (615) 758-5858  
Fax: (615) 758-5859

B119

Report to: **Stephanie Bosze**  
Email: **boling.brian@deq.state.or.us;**

Project Description: **Taylor Lumber**  
City/State Collected: **SHERIDAN, OR**  
Lab Project #: **OREGONDEQ-TAYLORLU**

Phone: (503) 693-5745  
FAX: (503) 373-1626  
Client Project #: **1843-00**

Collected by (print): **MICHAEL WHITSON**  
Site/Facility ID#: **SV8270PCP IL-Amb-NoPres (PCP ONLY)**  
P.O.#:

Collected by (signature): *[Signature]*  
Immediately Packed on Ice N    Y     
**Rush? (Lab MUST Be Notified)**  
Same Day ..... 200%  
Next Day ..... 100%  
Two Day ..... 50%  
Three Day ..... 25%  
Date Results Needed  
Email?   No   X Yes  
FAX?   No   X Yes  
No. of Cntrs

Account: **OREGONDEQ** (lab use only)  
Template/Prelogin: **T70883/P352909**  
Cooler #: **413D**  
Shipped Via: **FedEX Ground**

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	SV8270PCP IL-Amb-NoPres (PCP ONLY)	Analysis/Container/Preservative	Remarks/Contaminant	Sample # (lab only)
✓ PZ-105	GPAB	GW		04/26	1015	20	X			1513596
✓ MW-15S	"	GW		04/26	1145	20	X			-01
✓ MW-13S	"	GW		04/26	1300	20	X			-02
✓ MW-12S	"	GW		04/26	1410	2	X			-03
✓ MW-06D	"	GW		04/26	1510	20	X			-04
✓ MW-06S	"	GW		04/26	1620	2	X			-05
✓ MW-06S DUP	"	GW		04/26	1620	2	X			-06
✓ MW-06S MS	"	GW		04/26	1620	2	X			-07
✓ MW-06S MSD	"	GW		04/26	1620	2	X			-08

\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: Reporting PCP only. PCP needed at 1 ug/l.

Note: Per lab, analysis is denoted as  
"SV8270 Acid (PCP Low Level only)"  
435593188501  
435593188512

pH \_\_\_\_\_ Temp \_\_\_\_\_  
Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature) <i>MICHAEL WHITSON</i>	Date: 04/27	Time: 2045	Received by: (Signature) <i>Stephanie Bosze</i>	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)
Relinquished by: (Signature) <i>Stephanie Bosze</i>	Date: 4/28/11	Time: 1500	Received by: (Signature) <i>[Signature]</i>	Temp: 2.9	Bottles Received: 35
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>[Signature]</i>	Date: 4/29/11	Time: 0930
				COC Seal Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA	pH Checked: <input checked="" type="checkbox"/> NCF: <input checked="" type="checkbox"/>

**Oregon Dept. of Env. Quality -  
ODEQ**  
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Hillsboro, OR 97124

Billing information:

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811 SW Sixth Avenue  
Portland, OR 97204

Analysis/Container/Preservative

Chain of Custody

Page 2 of 3



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Report to:

Stephanie Bosze

Email:

boling.brian@deq.state.or.us

Project

Description: Taylor Lumber

City/State  
Collected

SHERIDAN, OR

Phone: (503) 693-5745

FAX: (503) 373-1626

Client Project #

1843-00

Lab Project #

OREGONDEQ-TAYLORLU

Collected by (print):

MICHAEL WHITSON

Site/Facility ID#:

P.O.#:

Collected by (signature):

*[Signature]*

**Rush?** (Lab MUST Be Notified)

Same Day ..... 200%

Next Day ..... 100%

Two Day ..... 50%

Three Day ..... 25%

Date Results Needed

Email? ☐ No ☒ Yes

FAX? ☐ No ☐ Yes

No.  
of  
Cntrs

SV8270PCP 1L-Amb-NoPres (PCP ONLY) \*

Accdnr: OREGONDEQ (lab use only)

Template/Prelogin T70883/P352909

Cooler #: 4-1308

Shipped Via: FedEX Ground

Remarks/Contaminant Sample # (lab only)

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs
MW-9S	GRAB	GW		04/26	1750	20
MW-16S	"	GW		04/27	0800	20
MW-16S DUP	"	GW		04/27	0800	20
PZ-10Z	"	GW		04/27	0850	2
MW-10SS	"	GW		04/27	0950	2
MW-20S	"	GW		04/27	1045	2
MW-19S	"	GW		04/27	1150	2
PZ-10I	"	GW		04/27	1300	2
MW-1S	"	GW		04/27	1400	2

\*Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

Remarks: Reporting PCP only. PCP needed at 1 ug/l.

pH \_\_\_\_\_ Temp \_\_\_\_\_

Flow \_\_\_\_\_ Other \_\_\_\_\_

Relinquished by: (Signature) MICHAEL WHITSON	Date: 04/27	Time: 2045	Received by: (Signature) <i>[Signature]</i>	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)
Relinquished by: (Signature) Stephanie Bosze	Date: 4/29/11	Time: 1500	Received by: (Signature) <i>[Signature]</i>	Temp: 29°C	Bottles Received: 35
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) <i>[Signature]</i>	Date: 4/29/11	Time: 0830
				COC Seal Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA	pH Checked: <input checked="" type="checkbox"/> NCF: <input checked="" type="checkbox"/>





## NON-CONFORMANCE FORM

Login No.: LS13596  
Date: 4/29/11  
Evaluated by: Jeremy Watkins  
Client: OREGON DEQ

### Non-Conformance (check applicable items)

- |   |  |
|---|--|
| <input type="checkbox"/> Parameter(s) past holding time | <input checked="" type="checkbox"/> Login Clarification Needed   |
| <input type="checkbox"/> Improper temperature           | <input type="checkbox"/> Chain of custody is incomplete  |
| <input type="checkbox"/> Improper container type        | <input type="checkbox"/> Chain of Custody is missing (see below)   |
| <input type="checkbox"/> Improper preservation          | <input type="checkbox"/> Broken container(s) (See below)   |
| <input type="checkbox"/> Container lid not intact       | <input checked="" type="checkbox"/> Broken container: sufficient sample<br>volume remains for analysis requested (See below) |

If no COC: Received by \_\_\_\_\_  
Date: \_\_\_\_\_ Time: \_\_\_\_\_  
Temp: \_\_\_\_\_ Cont. Rec: \_\_\_\_\_ pH: \_\_\_\_\_  
☐ FedEx ☐ UPS ☐ SWA ☐ Other \_\_\_\_\_  
Tracking # \_\_\_\_\_  
☐ Insufficient packing material around container  
☐ Insufficient packing material inside cooler  
☐ Improper handling by carrier (FedEx / UPS / Courier)  
☐ Sample was frozen

Comments: ① Received 1 - 1 liter Amber broken for MW-135  
② Did not receive Samples for PZ105, MW-06A, MW-95, MW-165  
or MW-1165 Dup.

Login Instructions:

TSR Initials: JW

Client informed by call / email / fax / voice mail date: 4/29 time: 1710

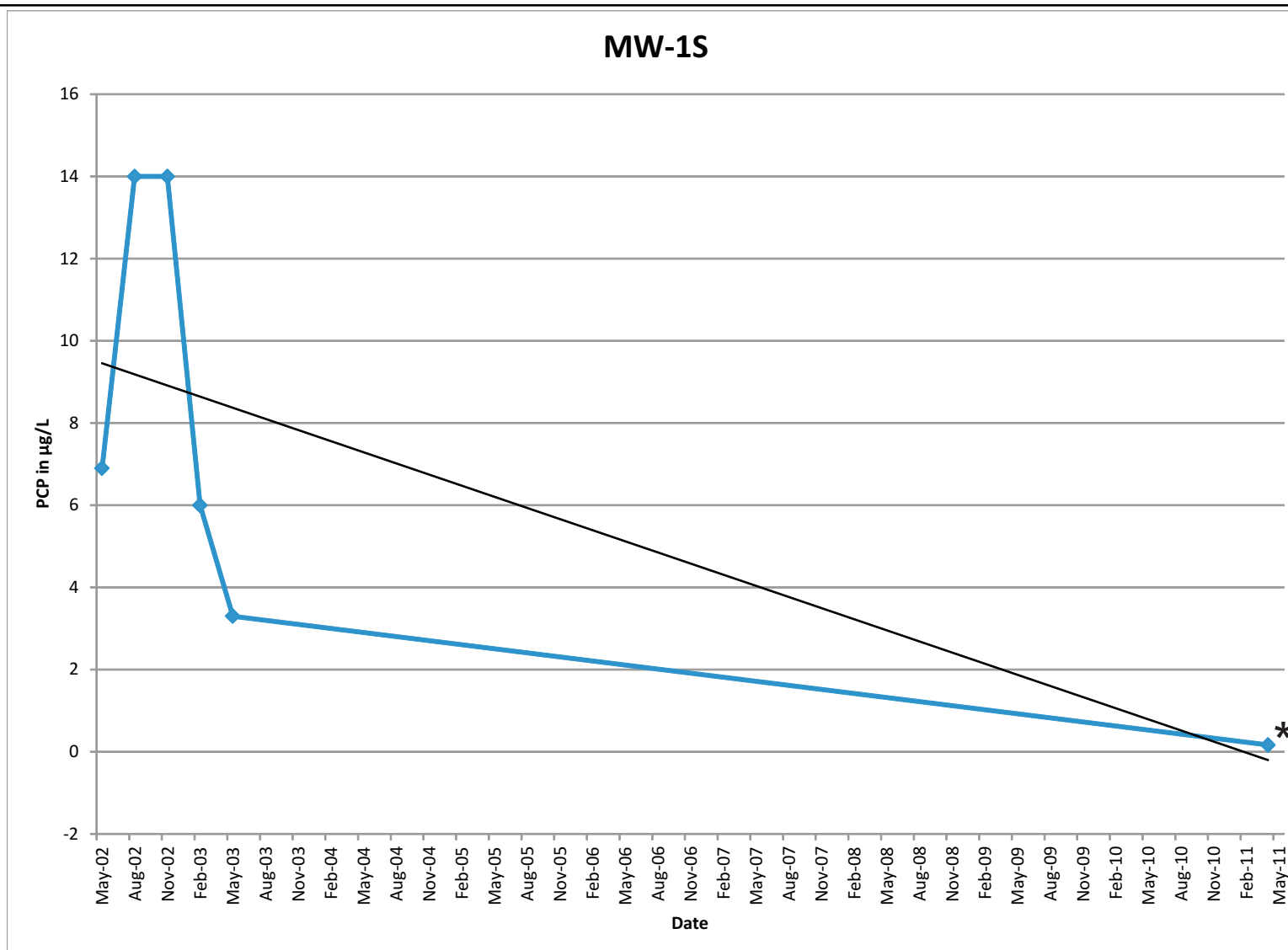
Client contact: Stephanie Bozse

- 1) Client informed. Run from remaining volume.
  - 2) Client shipped 5 coolers, and we received 4. So, there should be one more cooler that we received.
- Missing cooler was delayed in Memphis. It ~~is~~ should arrive Saturday or Monday. Log all other samples received.

## ***Appendix D***

---

### **Trend Plots for Select Wells**



**Legend:**

- ◆— Pentachlorophenol Concentration (µg/L)
- Trendline
- \* Value Below Method Reporting Limit (µg/L)

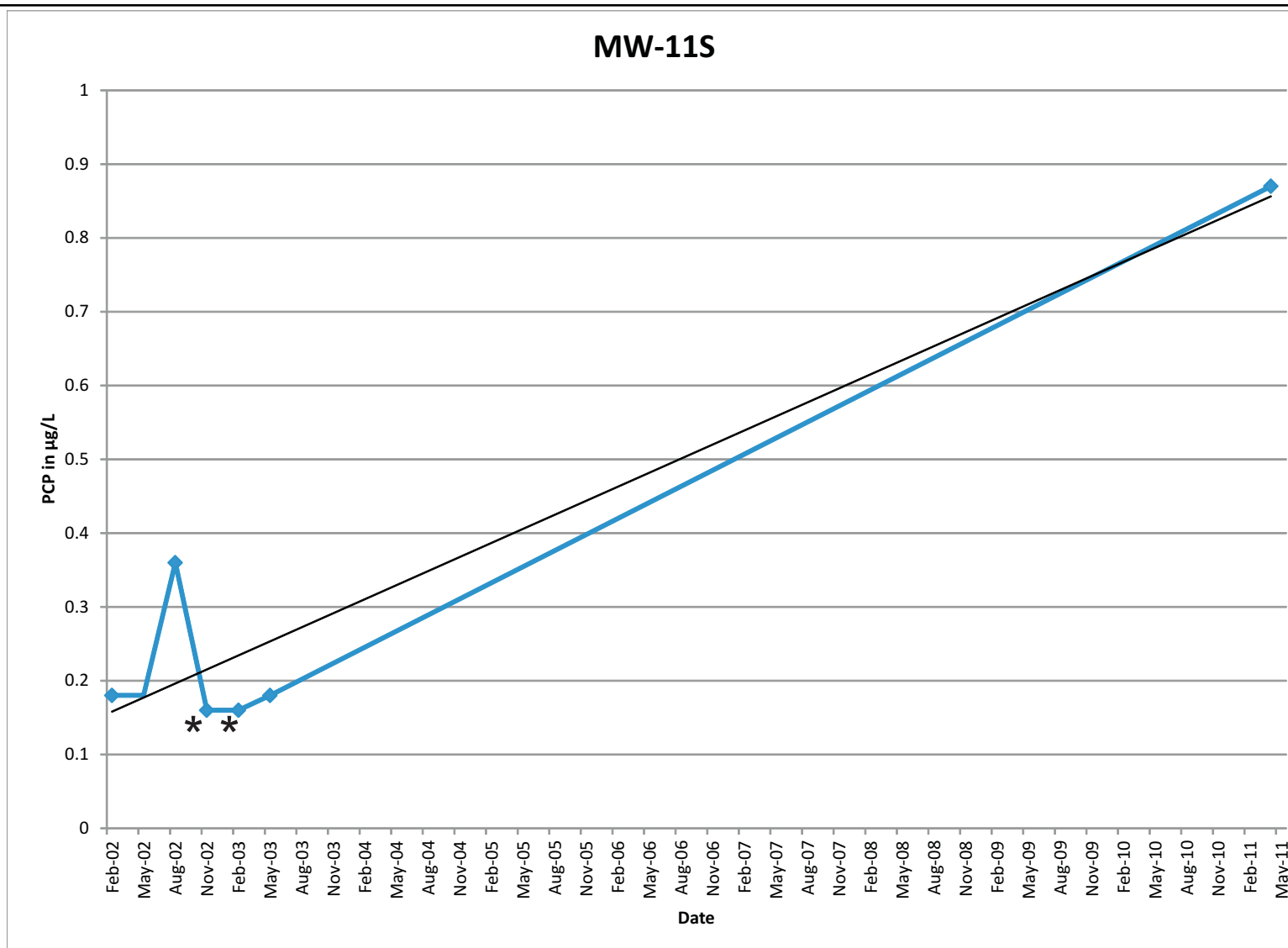
### MW-1S

2011 Groundwater Monitoring Report  
Taylor Lumber and Treating Superfund Site  
Sheridan, Oregon



Project Number	<b>1843-00</b>
September 2011	

Figure  
**D-1**



**Legend:**

- ◆— Pentachlorophenol Concentration (µg/L)
- Trendline
- \* Value Below Method Reporting Limit (µg/L)

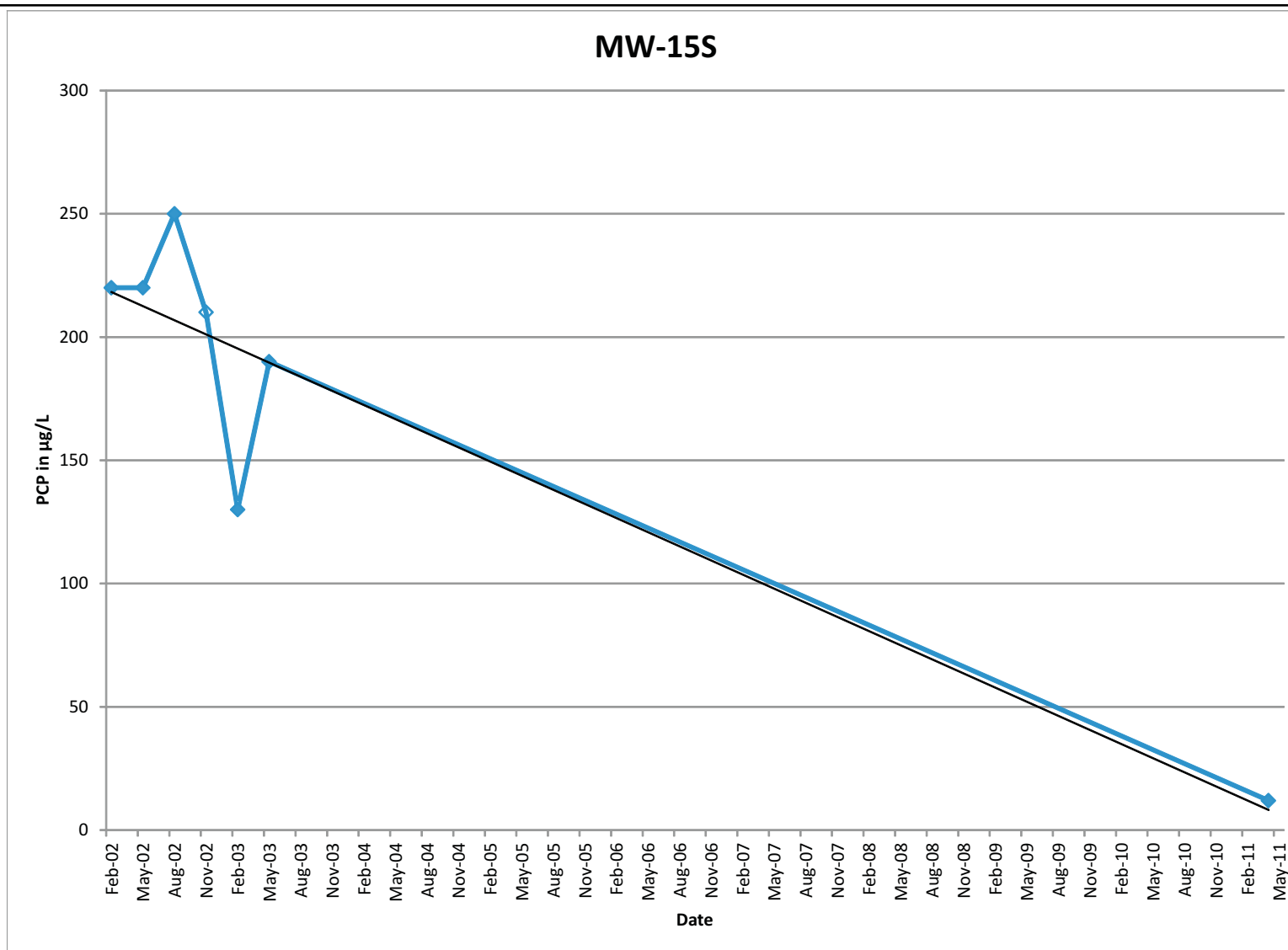
### MW-11S

2011 Groundwater Monitoring Report  
Taylor Lumber and Treating Superfund Site  
Sheridan, Oregon



Project Number	1843-00
September 2011	

Figure  
**D-2**



**Legend:**

- ◆— Pentachlorophenol Concentration (µg/L)
- Trendline

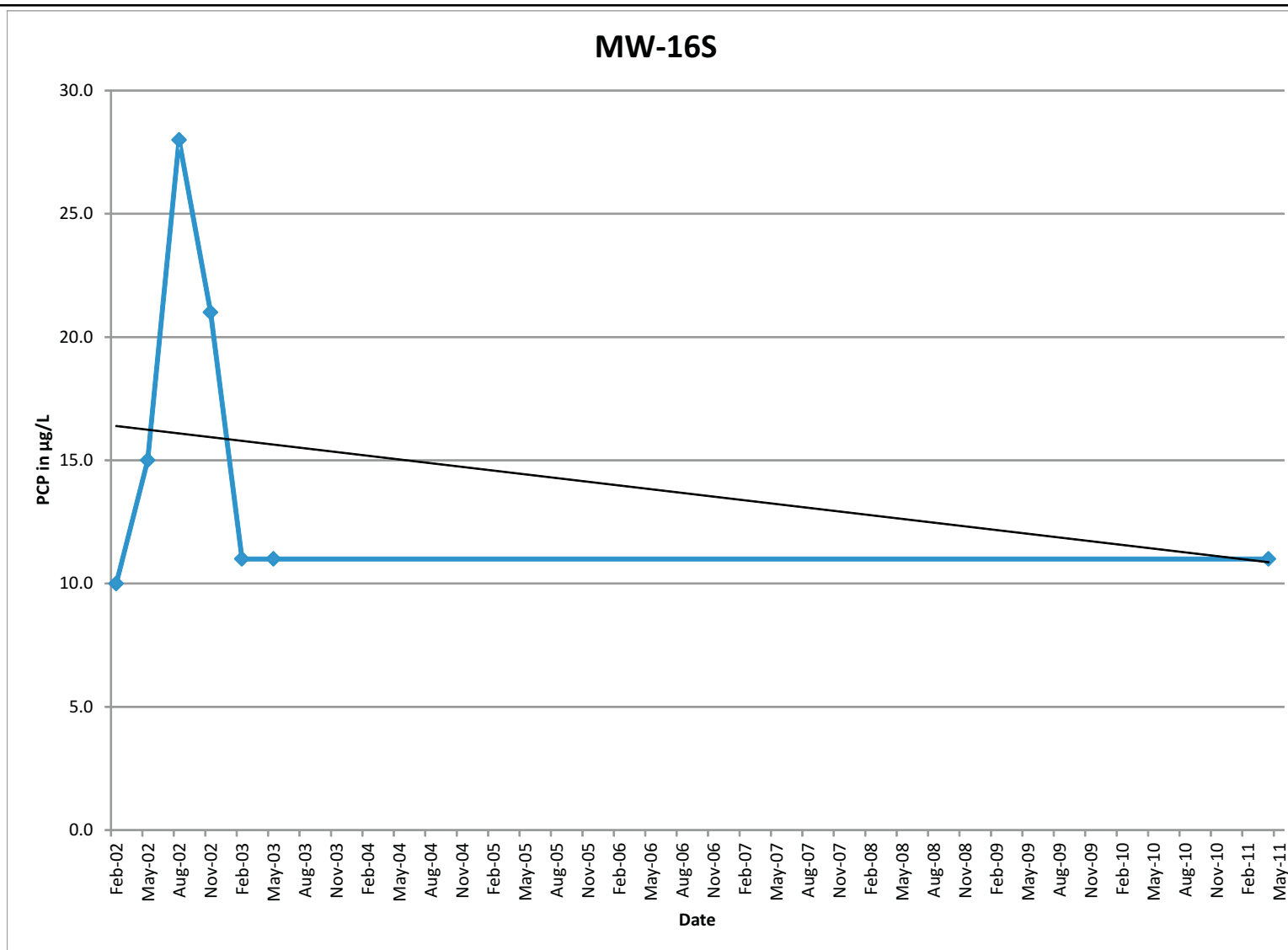
### MW-15S

2011 Groundwater Monitoring Report  
Taylor Lumber and Treating Superfund Site  
Sheridan, Oregon



Project Number	1843-00
September 2011	

Figure  
**D-3**



**Legend:**

- ◆— Pentachlorophenol Concentration (µg/L)
- Trendline

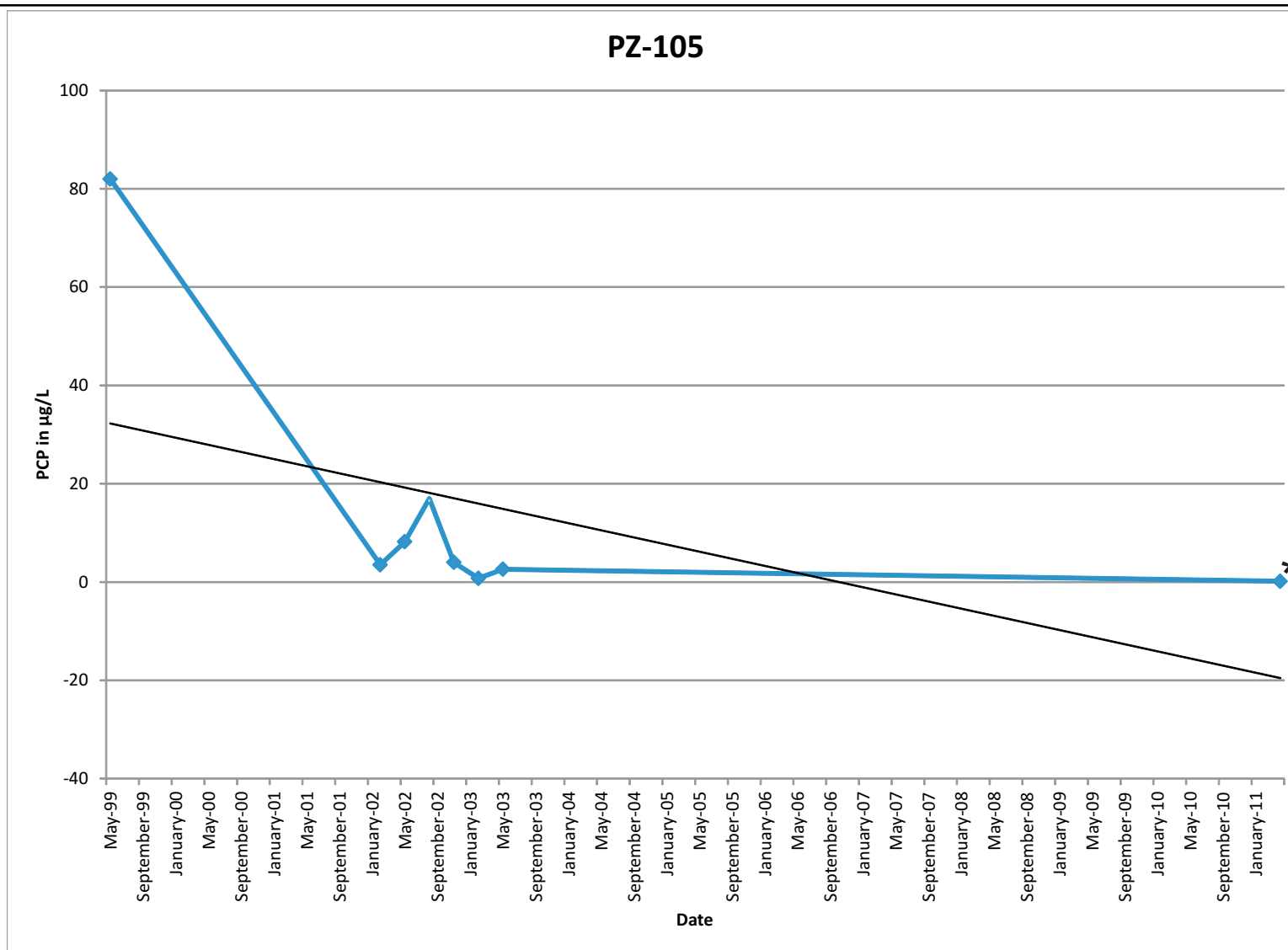
### MW-16S

2011 Groundwater Monitoring Report  
Taylor Lumber and Treating Superfund Site  
Sheridan, Oregon



Project Number	1843-00
September 2011	

Figure  
**D-4**



**Legend:**

- ◆— Pentachlorophenol Concentration ( $\mu\text{g/L}$ )
- Trendline
- \* Value Below Method Reporting Limit ( $\mu\text{g/L}$ )

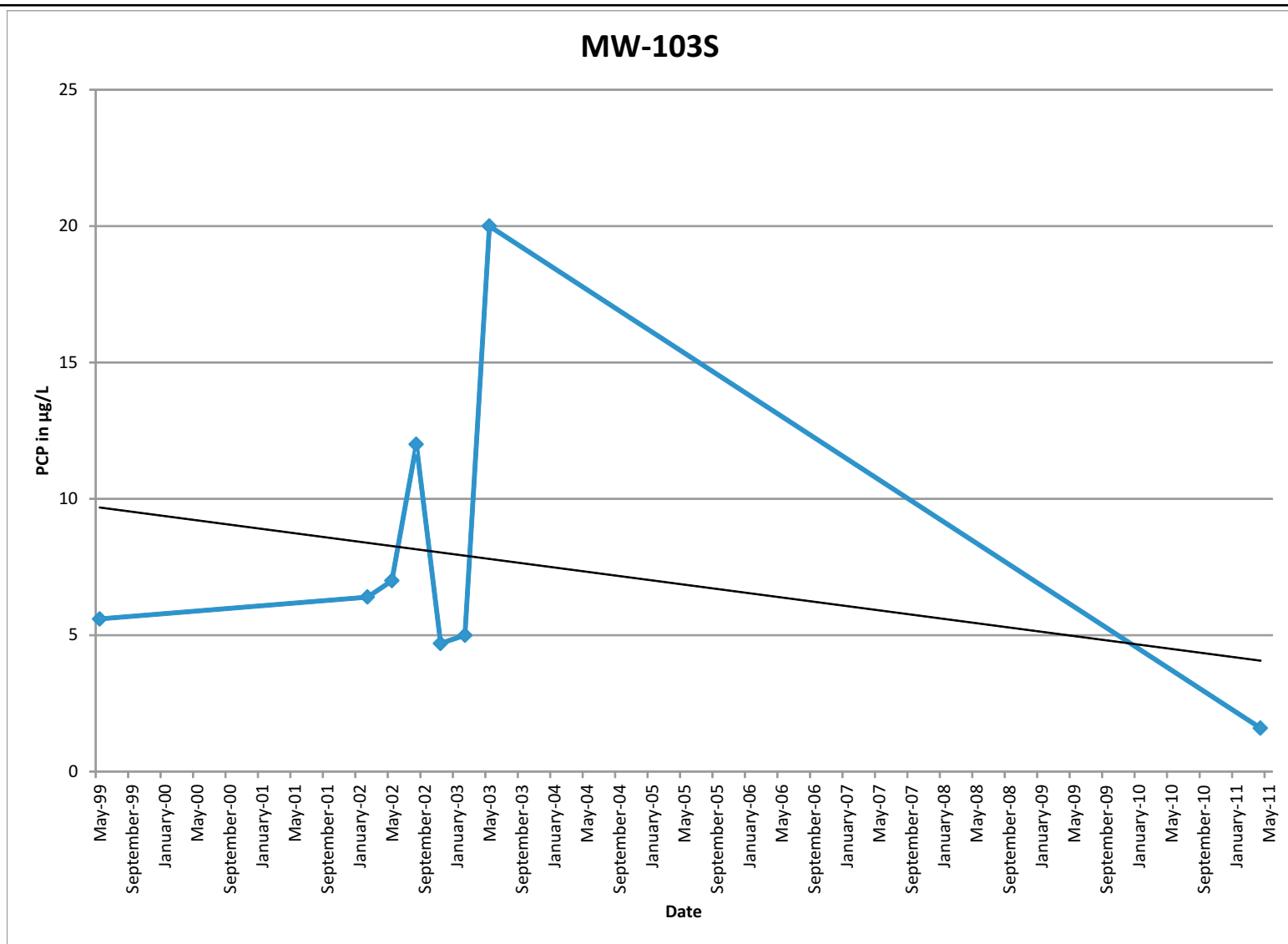
### PZ-105

2011 Groundwater Monitoring Report  
Taylor Lumber and Treating Superfund Site  
Sheridan, Oregon



Project Number	1843-00
September 2011	

Figure  
**D-5**



**Legend:**

- ◆— Pentachlorophenol Concentration (µg/L)
- Trendline

### MW-103S

2011 Groundwater Monitoring Report  
Taylor Lumber and Treating Superfund Site  
Sheridan, Oregon



Project Number	1843-00	Figure
September 2011		D-6